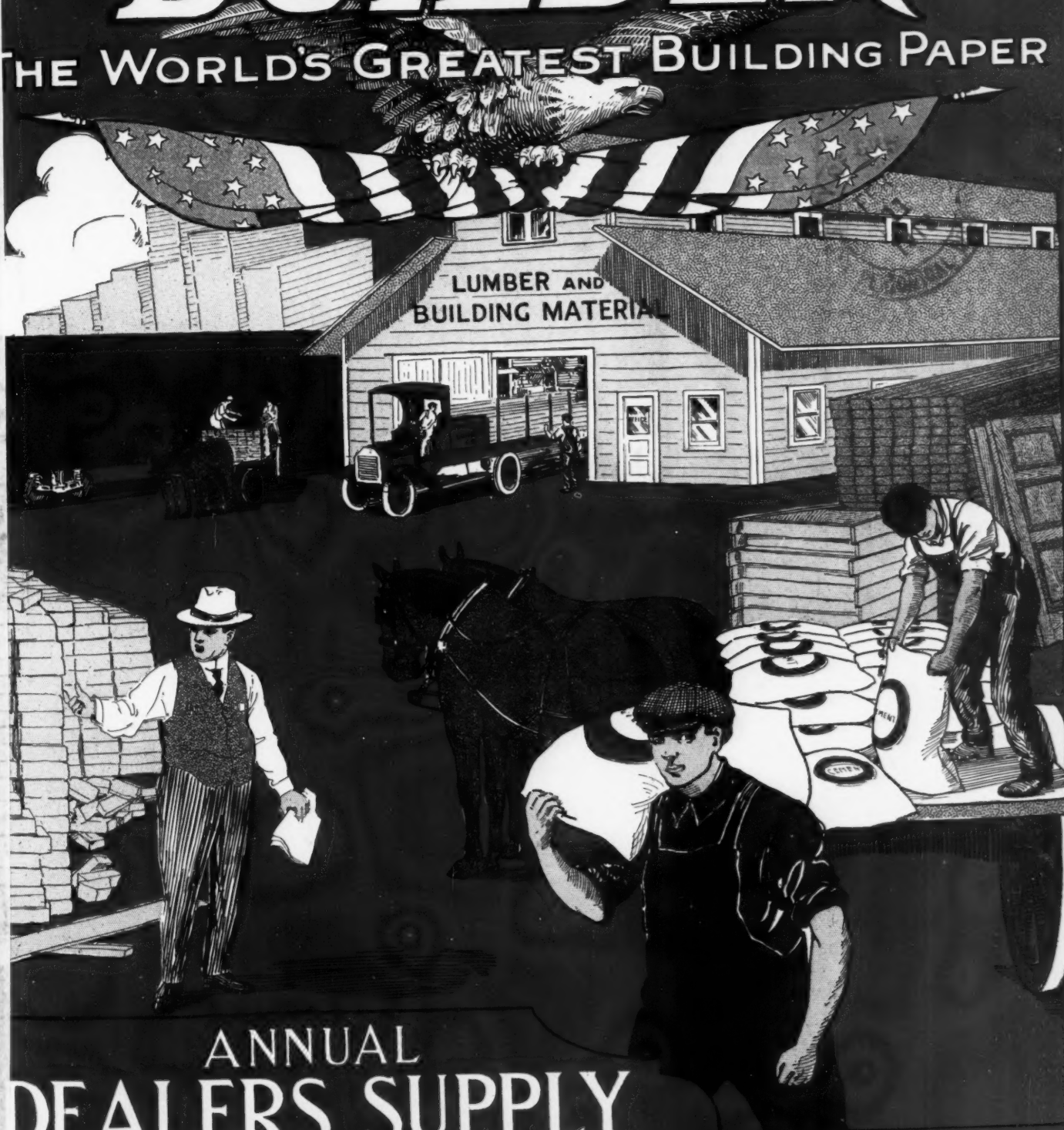


NOVEMBER, 1917

PRICE 20 CENTS

AMERICAN BUILDER

THE WORLD'S GREATEST BUILDING PAPER



ANNUAL
DEALERS SUPPLY
NUMBER

Contents Page 39—Advertisers' Index Page 161
Published in Chicago

Do you build stucco garages?

There's good business in building garages.

The auto owner who hasn't a garage wants one and the man who has a garage often wants a bigger and better one. Plenty of demand and you can satisfy it with well-built garages.

Stucco makes the most satisfactory garages, because it is fire-resistant and can be made almost absolutely fire-proof. Its first cost is low—less than brick or stone, nearly as little as wood. The maintenance is almost nothing, for a stucco garage requires little repairs and no painting.

Besides, stucco lends itself easily to almost any design or finish and can be made very attractive—gray, using Atlas Portland Cement; pure white, using Atlas White Non-Staining Portland Cement; or any of a wide range of warm mellow harmonious colors, using Atlas White and exposed colored aggregates—marble and granite screenings, for instance, or colored sand, or gravel.

Ask us about it

We will be glad to send you absolutely free our books on color stucco and stucco garages. Check, sign and mail the coupon below.

The Atlas Portland Cement Company

Member of the Portland Cement Association

New York, Chicago, Phila., Boston, St. Louis, Minneapolis, Des Moines, Dayton, Savannah



ATLAS



WHITE

The Atlas Portland Cement Company,
30 Broad Street, New York, or Corn Exchange Bank Building, Chicago

Send me information and specifications on the new color stucco—also the "Contractor's Atlas" and special information on the subjects checked:

☐ New Stucco Homes

☐ Remodeling in Stucco

☐ Stucco Garages

☐ Stucco Bungalows

NAME.....ADDRESS.....

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

A Complete Planing Mill — All In One Machine

Right now when speed is everything—when time means money—you will want the handiest, speediest Saw Rig obtainable.

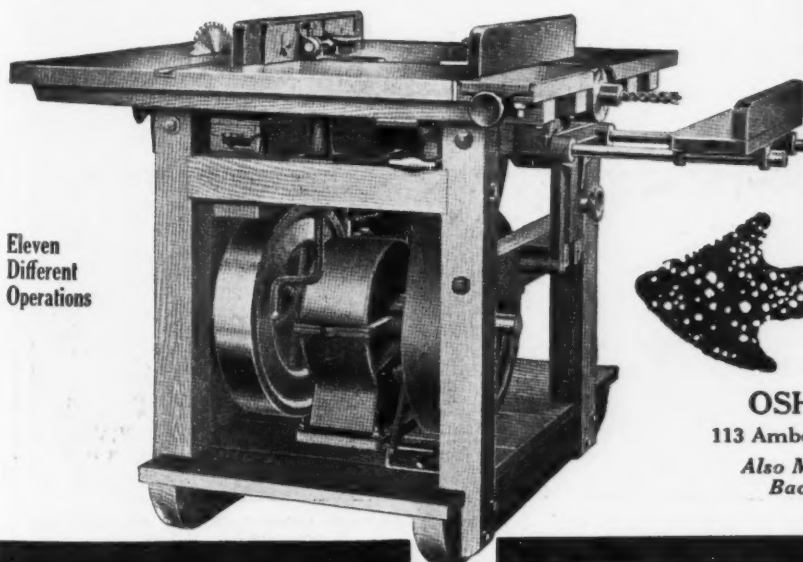
That will be an



EVEREADY SAW RIG

The Eveready was designed for complete service—to do every ordinary job—and also for those unusual, catchy little tricks that are so annoying and delaying—if you do not have the right tool.

The Eveready does them all. It is light in weight—can be taken right out on the job—and yet is strong and sturdy, built for a lifetime of hard usage. Two men can work on opposite sides of the machine at the same time. An efficient, dependable little Saw Rig that will make anything that can be made of wood.



Eleven
Different
Operations

**RIP SAWS
CROSS CUTS
TENONS
JOINTS
BORES
GRINDS
SANDS
JIG SAWS
RABBETS
BEVELS
MITRES**

Write today for descriptive
literature and catalog.

OSHKOSH MFG. COMPANY

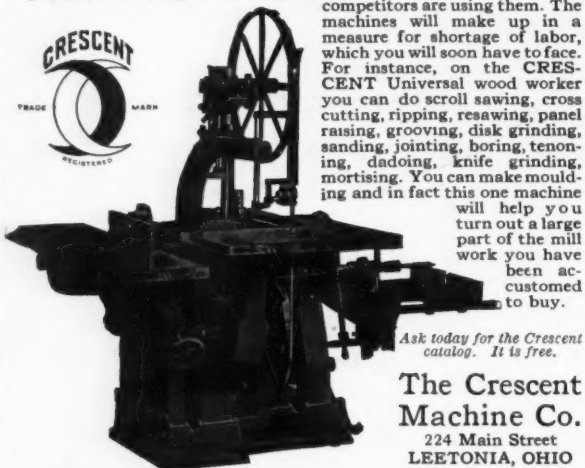
113 Amber Street, OSHKOSH, WISCONSIN

Also Manufacturers of Oshkosh Mixers and
Back Fillers. Liberty Bonds accepted
in payment at full face value.



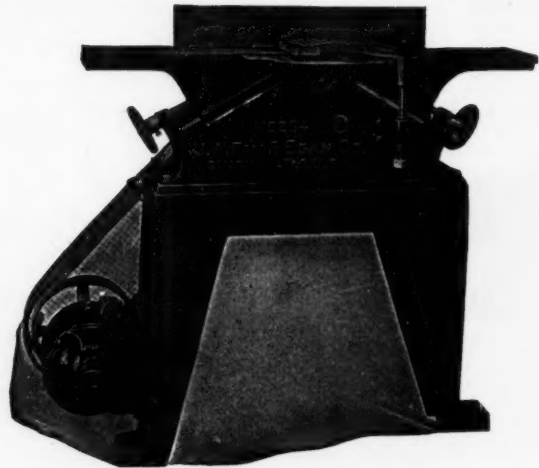
The CRESCENT catalog of WOOD WORKING MACHINERY will solve your problems. On some of the 143 pages you will find exactly the Universal wood worker, band saw, saw table, planer, planer and matcher, borer, reversible single spindle shaper, double spindle shaper, hollow chisel mortiser, swing cut off saw, post borer or variety wood worker you will need to keep your shop busy this winter.

If you are accustomed to doing your work by hand, you owe it to yourself to investigate the merits of power driven machines. Your competitors are using them. The machines will make up in a measure for shortage of labor, which you will soon have to face.



Ask today for the Crescent catalog. It is free.

The Crescent Machine Co.
224 Main Street
LEETONIA, OHIO

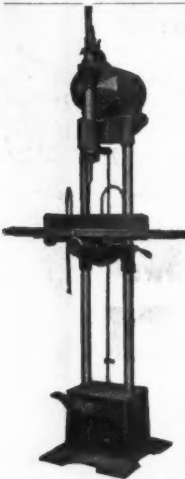


—a really practical Carpenter's Hand Planer

—bench or pedestal—with or without motor

DON'T buy a toy, get a real machine: 64-inch safety head, thin air hardened steel knives, adjustable bevel fence, removable steel lips, rabbeting arm, pedestal that gives your feet clearance; easy to keep clean under the machine; a practical time-saver and money-maker. Write for Bulletin H-7.

J. A. Fay & Egan Company
545-565 W. Front St., Cincinnati, O.



SUPERIOR HOLLOW CHISEL MORTISER and BORING MACHINE

SPEED and ACCURACY

account for the rapidly growing popularity of the SUPERIOR. This picture shows the Style C.F., also made without motor, with countershaft on base for belt drive. Style C.V. has vertical motor direct-connected to bit shaft.

WRITE TODAY FOR
FREE TRIAL

Warren W. Morse, The Low-Priced
1308 West Lake St. Mortiser
Minneapolis, Minn.

COMPLETE OUTFIT PRICE HAND AND FOOT-POWER MACHINERY

Our No. 7 Scroll Saw is warranted to be made of good material and workmanship, and to saw pine 3 inches thick at the rate of one foot a minute.

SEND FOR
CATALOGUE

W. F. & Jno. Barnes Co.

74 Ruby St. ROCKFORD, ILL.



Write for catalogue showing full line of Wood Working Machinery for Carpenters and Builders. Also Bargains in second hand Machinery.



CHICAGO MACHINERY EXCHANGE

1215-1223 WASHINGTON BOULEVARD
CHICAGO, ILLINOIS

The Men Who Use Are The Men Who Know



FACTORY OF HUTHER BROS. SAW MANUFACTURING CO.
1190 University Ave., Rochester, N. Y., U. S. A.

You should hear what they say. They Know

That Huther Bros. Patent Groover or Dado Head is the best Dado on the market. They also know that the Dado Head or Groover will be sent on approval to any responsible party, and if not satisfactory in every respect it can be returned to us at our expense.

A Better Buy Cannot Be Had.

They can be used on any Circular Saw Mandrel, for cutting any width groove from $\frac{1}{8}$ to 4 inches or over.

Groover consists of two outside saws, each of which is a groover in itself, and as many inside cutters as required.

Inside cutters are made $\frac{1}{16}$, $\frac{1}{8}$ and $\frac{1}{4}$ inch thick, so that any width groove measurable in sixteenths may be cut.

The outside cutters are made $\frac{1}{8}$ inch thick.

It will cut a perfect groove either with or across the grain, and will not leave a rough edge as is the case with ordinary groovers. It is highly recommended.

A Word About The Sleeves.

These sleeves are used for mounting Dados or saws on shafts where it is necessary to change position of same, and are especially useful for cutting grooves for partition boxes, cleats, etc. We manufacture these from steel, and same are tightened to shaft with headless set screws.

We also manufacture Regular Circular Saws and Band Saws.

Prices and catalog gladly furnished on application.



OUTSIDE CUTTER



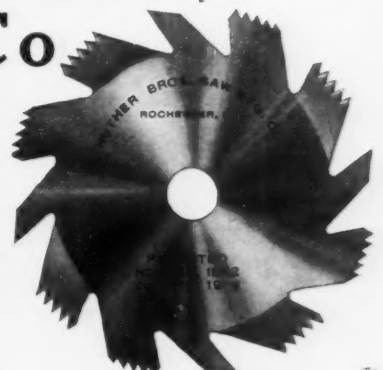
INSIDE CUTTER

LOOSE SLEEVES



Huther Bros Saw Mfg Co

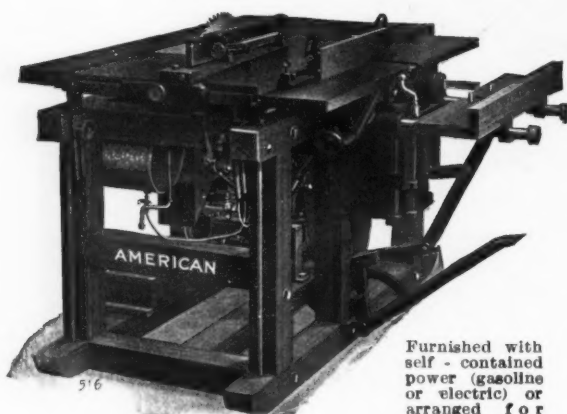
Rochester, N.Y., U.S.A.



OUTSIDE CUTTER

Distinguish Between "Cheap" and "Inexpensive"

If it is a "cheap" variety wood-worker you're looking for, you have an entirely wrong idea of woodworker values and of what a woodworker should be expected to do and be. Don't let the dollar sign blind you to comparative values.



Furnished with self-contained power (gasoline or electric) or arranged for belt service.

"AMERICAN" VARIETY WOOD-WORKERS

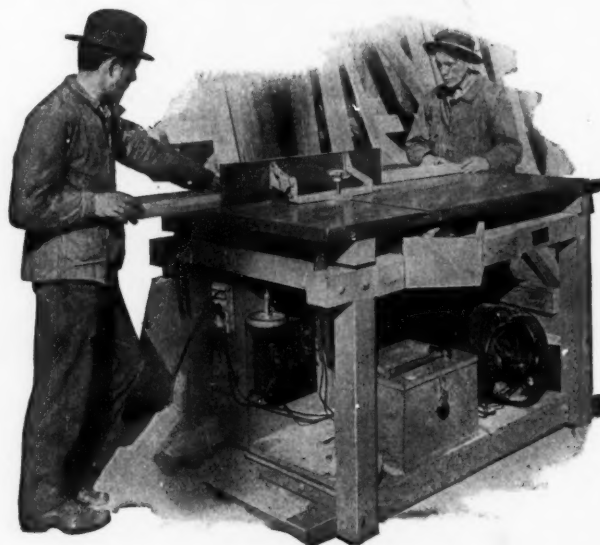
are not "cheap" machines—but they are the most **inexpensive** woodworkers you can buy. With an "American" the first cost is practically the last cost. You won't be burdened with the endless chain of repair costs that goes with a "cheap" woodworker. You'll get maximum output at minimum cost over a long period of years. And that's what you're looking for, isn't it?

Then send now for bulletin 67

American Saw Mill Machinery Co.

1360 Hudson Terminal
NEW YORK CITY

C. H. & E. PORTABLE SAW RIGS



Eight Complete Sizes Portable Saw Rigs.
Write for Catalog

C. H. & E. Manufacturing Co., Inc.
322 Mineral Street Milwaukee, Wis.

SILVER LAKE A Sash Cord

The guaranteed sash cord (since 1869 the standard) not only outwears common cords, but outwears chains and ribbons. The name Silver Lake A is printed on every foot of the genuine. Guaranteed full lengths.

Silver Lake Co.
Newtonville, Mass.

The Practical Workman is Sure to know the Reason Why

Wallace Bench Planer

"We are building a five-room bungalow and have made our own window sashes, casings and all other Planer work on the Wallace Bench Planer. It has stood the strain in handsome fashion, and I am more than pleased with it."

—So says F. H. McCREA, Weatherford, Okla.

Motor or
Belt Driven
4 in. Knives
18 in. Long

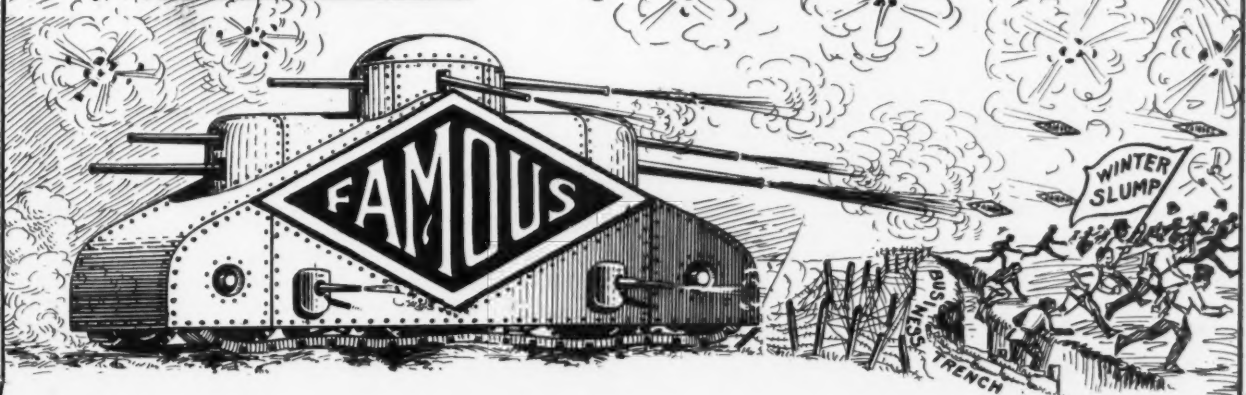


Portable
Weighs
50 Lbs.
Low Price

Write for Descriptive Folder

J. D. Wallace & Co. 1405 W. Jackson Blvd.
CHICAGO

Drive 'em out with this..... Machine!



Maybe you think conditions are again conspiring against your making a profit this winter. They are not. You can make progress and bank profits this winter IF YOU PLAN FOR IT RIGHT NOW and don't put it off. You can put one or more "FAMOUS" woodworking machines into your territory and they will route the Winter Slump ranks for you.

It is no small trick to keep profitably busy all winter—depending on hand work—you know that. But a woodworker makes the task very much easier.

You can handle a greater variety of work—you can cut the cost of working up lumber—you can more than double your capacity without extra help—you can put on extra speed when needed, winter or summer. You can use a "Universal" in a shop during the winter or all the year around. You can move it from job to job outside.

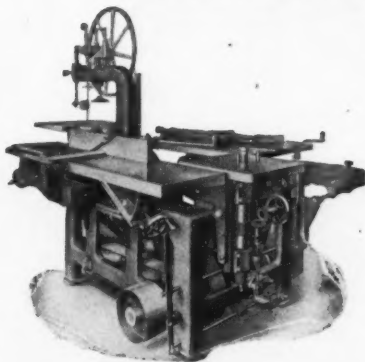
An Equipment of "FAMOUS" Woodworking Machines causes your labor problem to fade away

Never was there a time when these machines save more actual cash for their owners—and they cost very little more to buy than when labor was cheaper. The wages of even ONE man represents a neat little profit. Drop us a line—or mail the coupon and let's talk this over and see what FAMOUS machines will save for you and how they will pay you this winter. Don't put it off.

Winter is almost here. If you act right now you can turn these guns on the annual slump and drive it out.

THE SIDNEY TOOL COMPANY

SIDNEY, OHIO



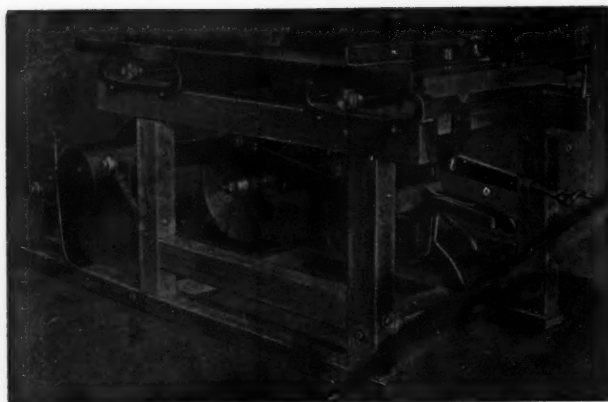
THE SIDNEY TOOL COMPANY
Sidney, Ohio

Gentlemen:

Send me Catalog No. 12, and Bulletins on Woodworking machines. I am interested.

Name.....

Address.....

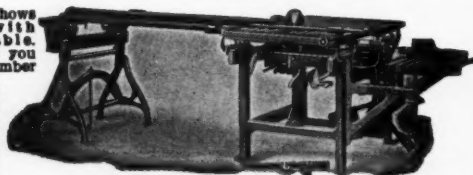



**NOW IS THE TIME TO GET A
BEACH
DOUBLE ARBOR RIP AND CUT-OFF MACHINE**

Get this money-maker on the job. This portable wood-worker will handle all your fine sawing, as well as your dimension stuff. Either gasoline engine or electric motor drive. Has our patented rolling table, making it the most efficient machine on the market. Don't delay—make this year the most profitable and successful of your career. Write for descriptive catalogue.

BEACH MFG. CO., Montrose, Pa.

This view shows extension with rolling table. This allows you to handle lumber up to 90 ft. and slides easily with 1000 lbs. weight in it. Locks instantly for ripping or beveling.



QUICK ACTING  SELF LOCKING

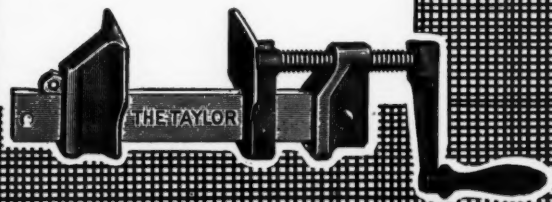
Clamps

**An Investment
Not an Expense**

The quickest and strongest clamps made. That's why they're the standard in U. S. Government Works and in such concerns as General Electric Co., Singer Sewing Machine Co., Victor Talking Machine Co., etc.

We can PROVE it in your own shop. Write today.

James L. Taylor Mfg. Co.
Poughkeepsie, N. Y.



100 Lafayette St.,
NEW YORK

THE JAMES SWAN COMPANY, Seymour, Conn



Awarded Medal of
Honor on
Mechanics' Tools
at Panama-Pacific
Exposition.

Manufacturers of all kinds of BITS, CHISELS, DRAW KNIVES, GOUGES, GIMLETS, AUGERS, NAIL SETS, SCREW DRIVERS, COUNTER-SINKS, BORING MACHINES and EXPANSIVE BITS.

Buy only Carpenters' Tools bearing the Trade Mark which stands for Quality.



Miller's Lock Mortiser

TWO MINUTES

Will cut an opening in a door for a mortise lock in **IMPROVED AND UP-TO-DATE** quite true in any kind of wood for any size lock from 1" to 1 1/2" thick. Easy to operate; durable in construction. Builders use it everywhere.



Sent subject to trial.

Miller Mfg. Co.
Cincinnati, Ohio
1/2 Rule Gauge for 75c., Postpaid

Parks Planing Mill Combination

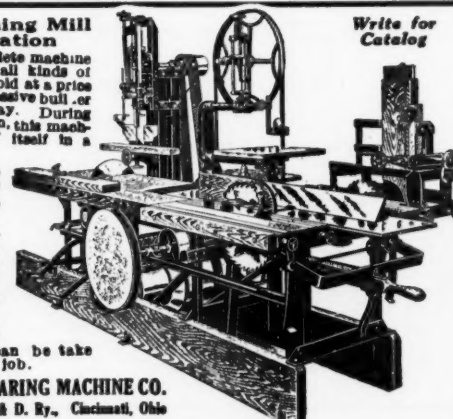
The most complete machine for getting out all kinds of mill work, and sold at a price which any progressive builder can afford to pay. During the season, this machine will pay for itself in a couple weeks.

Rip saw, 12" Jointer, 22" Band saw, Swing cut off saw, Shaper.

Upright mortiser, Tenoner, Sand disk.

All ready for instant use without having to make any changes. Machine can be furnished with long bases with engine mounted in rear so it can be taken right out on the job.

PARKS BALL BEARING MACHINE CO.
Fergus St. & C. H. & D. Ry., Cincinnati, Ohio



Write for
Catalog

GREYHOUND SUPERIOR SAWS



BISHOP'S BEST

We Offer to Carpenters and Builders the final result of years of experimenting and experience in producing good saws. This superior saw is known as our "GREYHOUND." We have satisfied ourselves that a better saw cannot be made. The GREYHOUND is a saw that will hold its sharpness and set longer than any other good saw. This saw should be in the hands of every mechanic who appreciates a good tool. We are proud of this saw and its easy running quality. Its symmetrical lines, toughness and fine adjustment typify its name "GREYHOUND."

30 DAYS' TRIAL---MONEY BACK IF NOT SATISFIED

We are so confident that this saw will meet with your approval that we offer it on trial for 30 days. If it does not come up to your expectations or fails to satisfy you in any way we will refund your money.

	Made in Both Straight and Skew Back also Ship Carpenters Pattern					
Length	18	20	22	24	26	28 inches
Each	\$2.85	\$3.00	\$3.15	\$3.30	\$3.50	\$3.85 net
	PACKED ONE IN A BOX					



GEO. H. BISHOP AND COMPANY

::

Lawrenceburg, Ind.



SILVER'S NEW WOODWORKING MACHINES

SAW TABLES, JOINTERS, SWING SAWS, BAND SAWS—

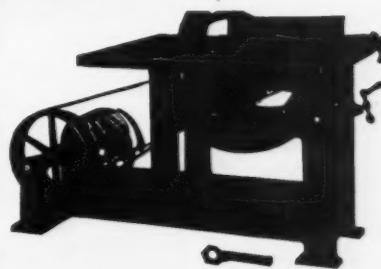
Tools of good honest construction, newest improvements and conveniences; patterns fresh from the designers.

Jointers, 8, 12, 16, 20, 24-in. Band Saws, 20, 26, 32, 36-in.
Swing Saws, 6½, 7, 7½, 8-ft.

Silver's machines are high-pressure machines. They will do your work and do it well, save you money and labor, suit you in size, and in prices, too.

Post up on these Tools. Ask for our printed matter at once.

The Silver Mfg. Co. 345 BROADWAY
SALEM, OHIO



C. G. HUSSEY & CO.
Pittsburgh, Penna.

MANUFACTURERS
OF

COPPER

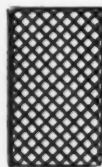
In Sheets, Plates, Rolls

CORRUGATED COPPER CONDUCTOR PIPE



Copper Nails, Copper Rivets, Conductor Pipe, Eaves Troughs, Elbows, Shoes, Mitres, Soldering Coppers, Gaskets, Etc.

Wire Window Guards



Counter Railings
Elevator Enclosures
Tubular Hand Rails
Brass and Bronze Work

DON'T FAIL

to get our catalog and full information for your own benefit!

The Cincinnati Mfg. Co., Cincinnati, Ohio



Accurate Tools for Carpentry and Cabinet- Making

You can't expect interior finish, or built-in cabinets to look well unless the stock is laid out accurately. Nor can you expect to do this work without spoiling stock unless you use accurate tools. And stock costs money these days.

Starrett
TRADE MARK
REG. U.S. PAT. OFF.
Tools

are accurate. The line includes squares, combination sets, rules, scratch gages, dividers, builders' combination tools, etc.

Send for Catalog No. 216

For Sale at all Good
Hardware Stores

The L. S. Starrett Co.

*The World's Greatest
Toolmakers*
Athol, Mass.

42-743



DIETZGEN DRAWING BOARDS



are accurate, dependable, and perfect in workmanship.

Only the most carefully selected and thoroughly seasoned stock is used in their manufacture, the stock being seasoned by a special process.

They are made of narrow strips of white pine, glued to the required width. The working edges are smooth, allowing an easy movement of the T Square.

Send for Drawing Board Booklet

Eugene Dietzgen Co.

Manufacturers

Chicago New York San Francisco
New Orleans Pittsburgh
Philadelphia



NICHOLLS FRAMING SQUARES

Gives all lengths and cuts of all
rafters for sixteen pitches of roof

The ORIGINAL and MOST COMPLETE

square on the market today
Send For Our Little Book Explaining This Rule

NICHOLLS MFG. CO., Ottumwa, Iowa

A POPULAR PRICED STEEL TAPE

LUFKIN "BANNER"

Accurate, standard size steel line 25 to 100 ft., put up in metal lined, auto leather case. A tool you need at a price you can afford. Ask your hardware man.

Measuring Tapes, Boxwood
and Spring Joint Rules
Send for Catalog

THE LUFKIN RULE CO.

Saginaw, Mich.

106 La Fayette St.
New York

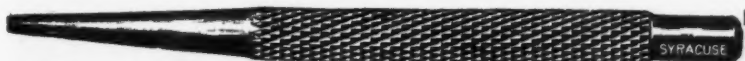


**INSIDE-CALIPER—DIRECT-READING**

figuring necessary even in the hardest inside or outside measurements. All measurements are easily read on rule. Lengths from 2 to 8 ft. selected boxwood, finished with waterproof lacquer—solid brass trimmings. Inquire of your dealer or send 20¢ per lineal foot and we will ship immediately.

Use the INTERLOX and all measuring is made easy. No

DAHL MFG. COMPANY
51 E. 42d St., New York City, N. Y.



12^c

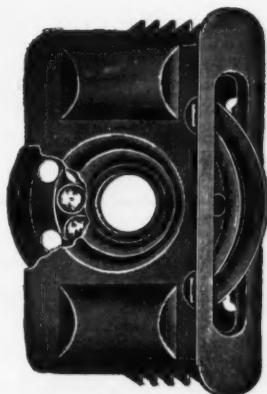
We want to help you spend 12 cents. Buy our nail set—best material, carefully tempered, accurately cupped and tested on steel. NO-ROL, a special kind made square to prevent rolling, costs 15 cents. We Will Mail Either of These Postpaid if Your Dealer Cannot Supply You

SYRACUSE TWIST DRILL COMPANY :: Syracuse, N. Y.

Sand's Aluminum Levels**Always Tell the Truth**

The standard of accuracy. And not only the most accurate—but easiest to read, even in the dark. Never rusts—cannot warp, split or crack—and are easily handled. The lightest levels made—strong and durable because the greatest strength is placed where most needed. Ask your dealer to show you these levels, and also write for our new circulars showing full size levels.

J. SAND & SONS Originators of Aluminum Levels 1023 - 29 Rivard Street, Detroit, Michigan



No. 10 Ball Bearing

"Grand Rapids"
Ball Bearing
ALL STEEL
Sash Pulleys

Fasten Automatically
No Nails—No Screws
Just Bore Four Holes

The automatic saw tooth fastening feature and the simple and easily made mortise will save in labor enough to pay for the pulleys.

The bearing contains eleven 1/4-inch Solid Steel Balls running in lubricant, insuring a noiseless, easy running wheel under any load.

NOISELESS—EVERLASTING
Write for FREE Samples

Fifty Different Styles

Grand Rapids Hardware Co.

Manufacturers

158 Eleventh Street - Grand Rapids, Mich.

"YANKEE"

Ratchet Driver No. 10

Saves Time
at Every Turn

Here you have—an easy working ratchet, right hand, left hand (and rigid), a comfortable handle and withal a strong and serviceable driver.

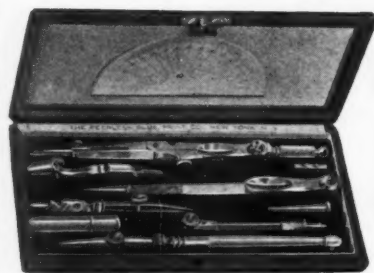


Made in 8 lengths of blade, from 2 inch for small screws, up to 12 inch suitable for all kinds of high power house carpentering.

Your Dealer Can Supply

Let us send you a "YANKEE" Tool Book.

North Bros. Mfg. Co.
Dept. A, Philadelphia, Pa.



Special Drawing Set

No. 450

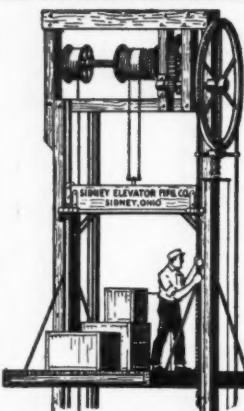
Price \$4.65

Sent parcel post prepaid

Cash with order

We have also a full assortment of large sets of instruments

PEERLESS BLUE PRINT CO.
341-347 FIFTH AVE. NEW YORK CITY



SIDNEY ELEVATORS

Will reduce your handling expense, and speed up your work.

Our machines are easily installed from our complete plans and instructions which are sent with each elevator.

The Reasonable Cost Will Interest You

Write us today, stating requirements, giving style of machine wanted, size of platform and number of feet travel, and we will quote a money saving price on equipment to serve you well.

SIDNEY ELEVATOR MFG. WORKS
SIDNEY, OHIO

G & B TWO LEVELS IN ONE

TRANSIT LEVELS

Has all the features of a Builder's Transit and Architect's Level. Durable, accurate and economical. You can use the G & B under all conditions. A quality instrument for \$67.50.

Write for circular "B."

Geier & Bluhm -:- Troy, N.Y.

Electric Dumbwaiter Service

If you are searching the market for dumbwaiter or elevator equipment that will operate quietly, economically requiring a minimum of attention, you will be interested in the Storm Electric Dumbwaiter equipment. Twenty years experience in this field enables us to provide maximum efficiency in Electric Dumbwaiter Service to meet the needs of your specification. Write for the descriptive bulletin No. 16. 50 Vesey St., Newark, N. J.

The Storm Mfg. Company



NO FALLING WINDOWS
SMASHING GLASS
POCKET FRAMES
SASH WEIGHTS
RATTLING
BINDING
CORDS with

AUTOMATIC SASH HOLDERS

**SPECIFY
USE
DEMAND**

Automatic Sash Holders

and save labor, lumber and money. Send for trial set (\$1 prepaid) stating approximate weight of sash, or our circular. **Hardware Sales Co., Inc.,** 52 Church St., New York.

HOISTS & ELEVATORS

Columbia Dumb-Walters
Pavement or Cellar Hoists
Jumper Disappearing Dumb-Walters
Chain Blocks, Cranes and Trolleys

Send for Catalog

J. G. SPEIDEL Reading, Pa.

DON'T WRECK BUILDINGS—MOVE THEM.

THE public now realizes that it does not pay to wreck buildings. People see that buildings can be moved easily and quickly at a reasonable cost, with no damage to the structure.

Now is the time to get into this profitable business.

All-Steel Giant House-Moving Trucks

and complete equipment at reasonable cost. My 25 years' practical experience backs you. I help you start and stay with you. Write me now. Just say, "Show me how I can make \$3,000 to \$5,000 a year moving houses." Ask for catalog "B" also.

E. W. LA PLANT, President
La Plant-Choate Mfg. Co.
620 Eastlack Ct., Cedar Rapids, Ia.



"Gives Lines and Levels - Accurately - Quickly"

Accuracy is the keynote in the construction of this improved convertible level. Accuracy and durability are built right into it. You can line up your foundation piers, plumb girders and examine walls in course of construction, accurately, quickly and with complete confidence that your results will be error-proof. Let us send you one of these moderate priced levels for free ten days trial, no obligation.

Send for circular and trial offer

DAVID WHITE CO., Inc.
419 E. Water St., Milwaukee, Wis.

No. 2020



CARPENTERS WANTED AS AGENTS

Now is the time to act. Big Money. Ready Seller

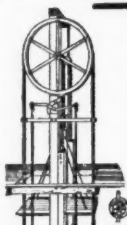
Sanitary Automatic Dumbwaiter saves carrying food to and from cellar. Perfectly ventilated; screened openings; finished inside with durable white enamel. Keeps food perfectly. Top lies flush with kitchen floor. You can walk over it. Operates with push button or lever. Also furnished as a Refrigerated dumbwaiter. Assembled complete ready to install. But three hours required to place our waiters in actual operation; old or new homes. Quotations include every needed supply. \$19.11 apiece. Illustrated catalogue.

York Automatic Dumbwaiter Works 639-645 West Market Street, York, Pa.

DUMBWAITER COMPLETE \$19.50 READY TO INSTALL

Includes all necessary material, not knocked down—machine, machine timbers, bolts, boxes, car, counterweight, ropes, guide ways, etc., all ready to set in hatchway and erection instructions. Length up to 20 feet. All material guaranteed. Money back if not satisfactory. Write for further particulars.

Highwood Dumbwaiter Co., Grand Ave., Leonia, N. J.



KIMBALL ELEVATORS PASSENGER AND FREIGHT

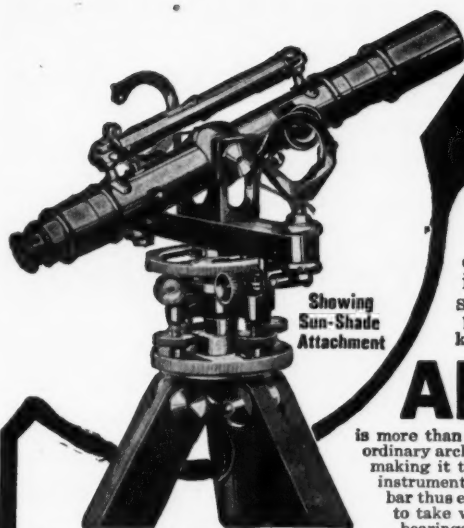
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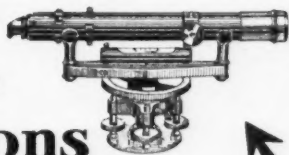
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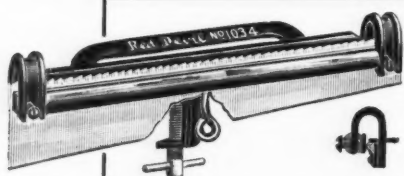
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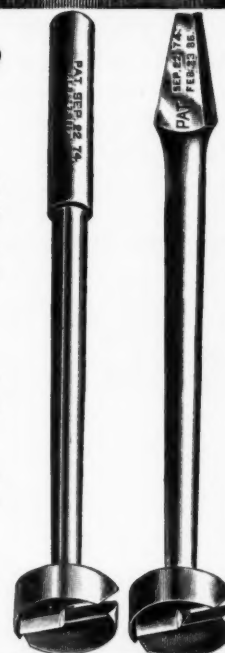
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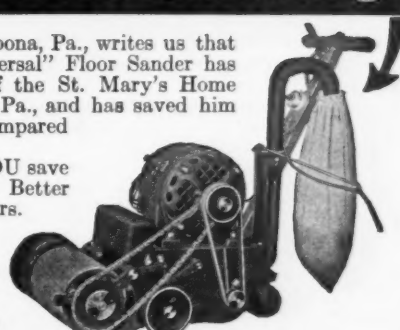
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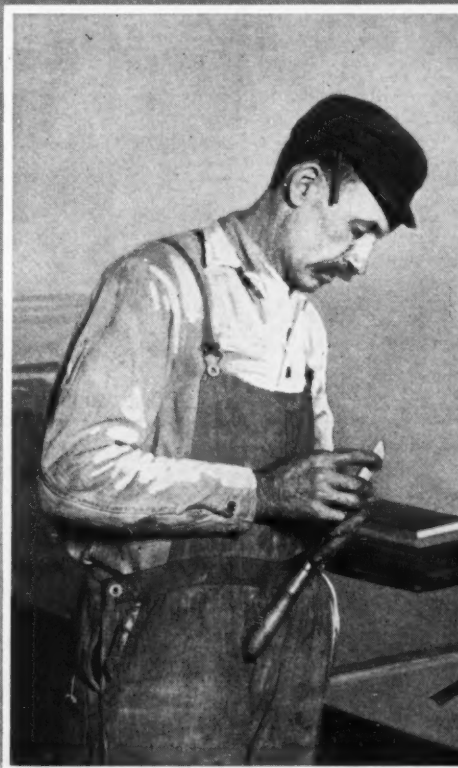
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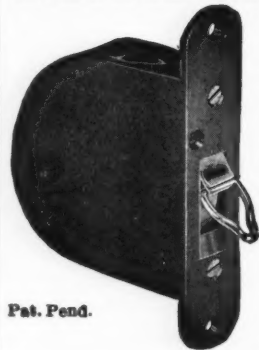
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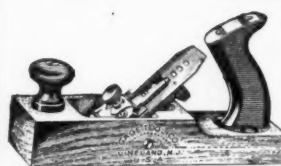
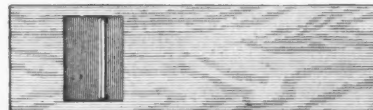
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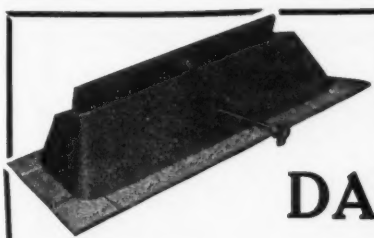
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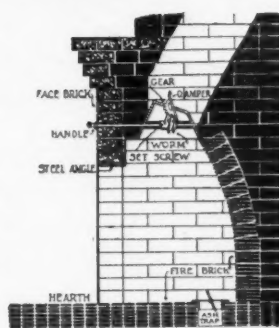
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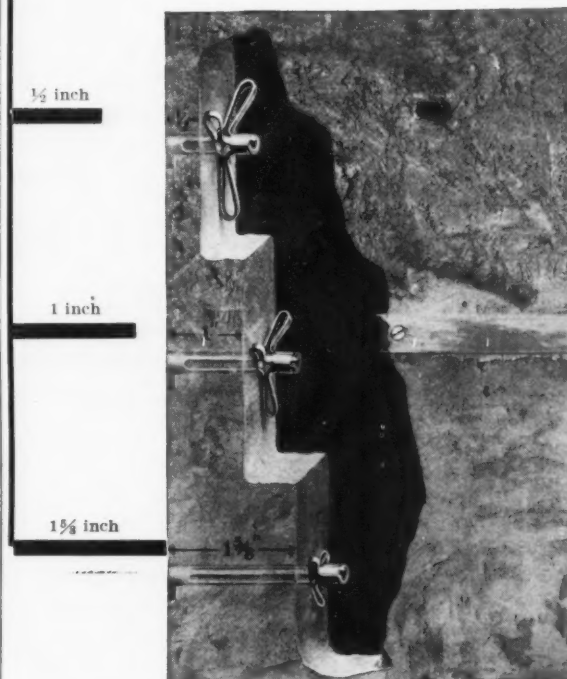
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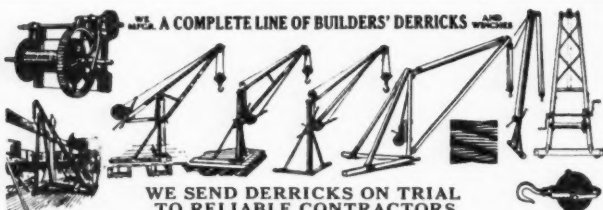
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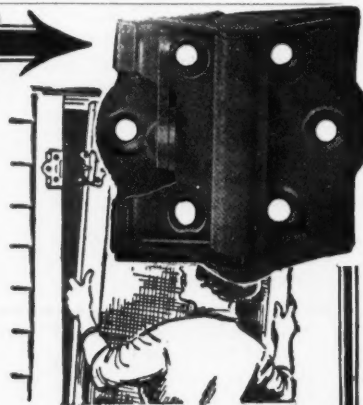
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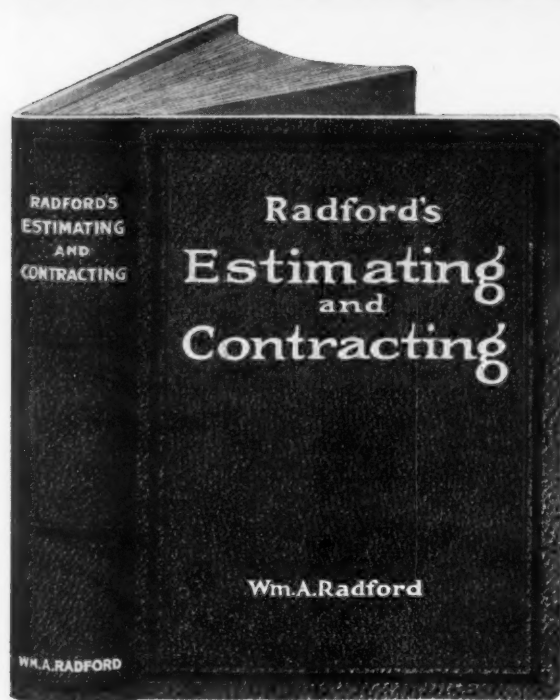
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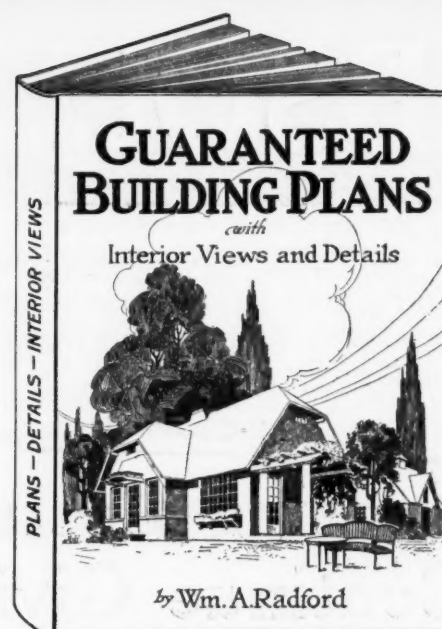
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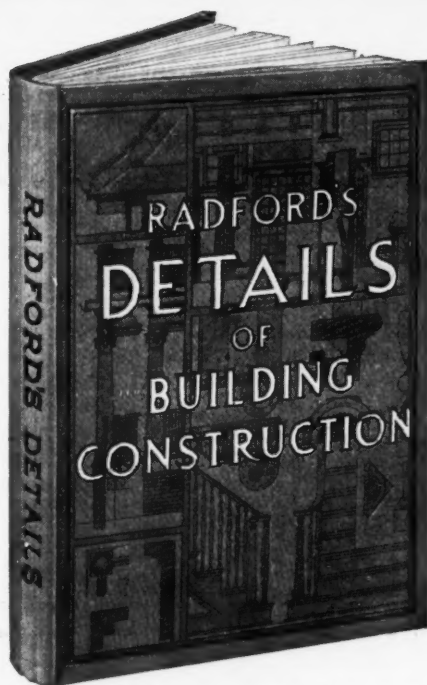
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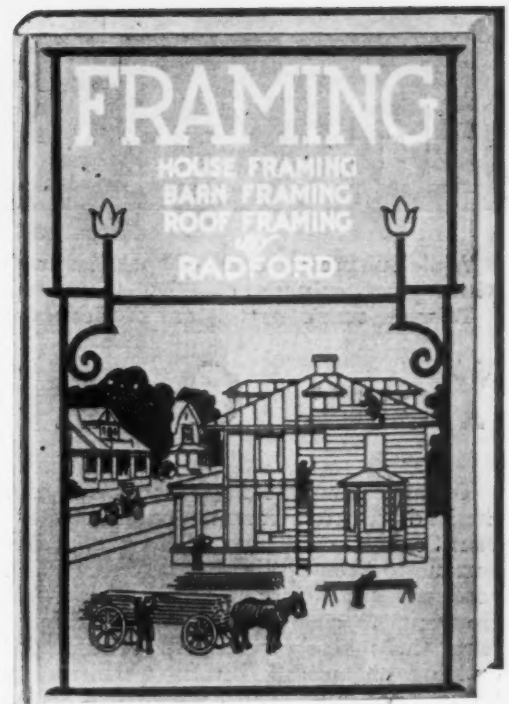
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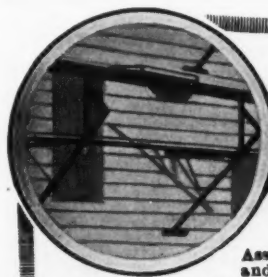
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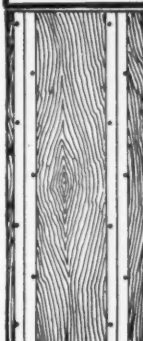
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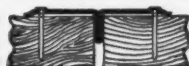
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Shows end view of Chief Batten with joint closed. Siding expanded. Note position of the batten in the crack.



Shows end view of Batten with the joint open and siding contracted. Chief Battens automatically accommodate expansion and contraction.



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RELIABLE brackets are the only kind of steel brackets on the market that can be used on stucco and brick work as well as frame construction. That's why so many builders find Reliable brackets the most satisfactory for their work.

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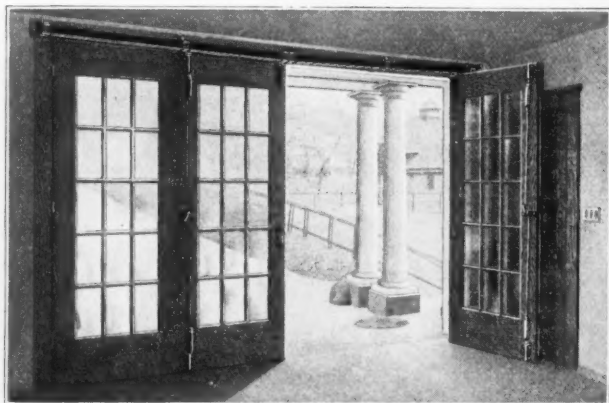
Simply fold them up and stow them away in your trunk. Think of what an advantage they are over wood scaffolding, besides being so much cheaper—and safer. Use them anywhere on the roof—chimney building—on the corners in the gables.

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Send today for further information and prices.

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Interior of Garage Entrance, equipped with Four-door Slidetite Garage Door Hardware

satisfied with their investment as time passes and ever more enthusiastic in praising the merits of Slidetite to their neighbors and friends.

Slidetite Hardware enhances the appearance of the garage. Operates easily. Keeps out the cold. Economizes space. Prevents the door from sagging, warping or banging in the wind. They can't move unless somebody moves them.

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"A hanger for any door that slides"

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**Pullman
Unit
Sash
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Cost Less Than
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Made entirely of pressed steel,
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Pullmanize Your Windows



Make it easy for the women

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Make it easy for the women folks to open and shut up the garage by putting in doors equipped with Topping Hangers.

Women like them

Topping Doors open and shut easily—noiselessly—they roll smoothly on the track—automatically lock when open—or closed—they fold back compactly against the garage when open and do not take up needed space inside. The Topping Garage Door Hanger is extremely simple in design—cannot get out of order. It is well made and good for many years of hard service.

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Safety Door Hanger Co.

309 Topping Bldg.

Ashland, Ohio

Desco
METAL
STORE FRONTS

How About Remodeling?

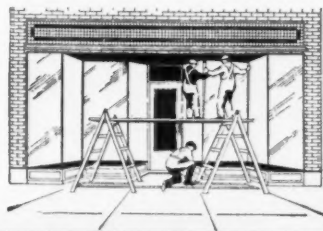
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Desco Store Front material will help you to meet this demand profitably. It is simple in construction and installation and the cost is surprisingly moderate.

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The Martin Fifth Wheel

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MARTIN ROCKING FIFTH WHEEL CO.
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\$3,000.00 IN ONE YEAR



This Bunch of Tires Will Make Several Dollars Profit

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Auto tire repair field a hundred times bigger and better than old bicycle days. Johnson, Tex., writes, "I made as high as \$18 profit in one day." Investigate today. Ask for FREE catalog.

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Write now for illustrated folder and copy of our catalog A11.

An Easy Running Door ---Even in Winter

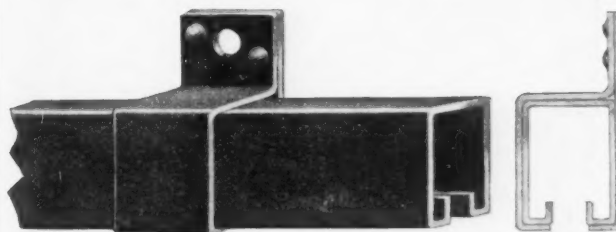
Even in winter when ice and snow cover the track of the average door, your customer's barn or garage door positively will not stick if hung with

The PITTSBURGH Door Hanger

The trolley track in which this hanger runs is covered on top, sides and ends. Snow and ice cannot reach the runways. Doors will not catch on the floor nor scrape against the side of the building because of the several adjustments.

The PITTSBURGH Door Hanger and Track are made substantially of tested iron and steel and can be installed easily and quickly on any style of sliding door. Ask your hardware dealer for this equipment by name—McKinney's PITTSBURGH Door Hanger and Track.

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Why build a home of brick or stone for sake of permanence and then for its most conspicuous details use a column of wood which will split, check, rot or warp in five years' time at most?

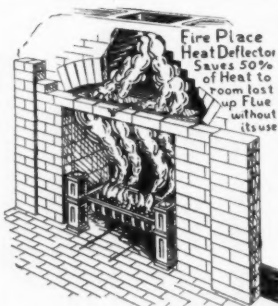
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"The Ones That Last A Lifetime"

They are as permanent as the brick itself, correct in every architectural detail and in keeping with the best in design. The shafts are open hearth steel, specially galvanized and rust proofed. Thousands of them are in use and approved by satisfied owners and architects.

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NICKERSON Patent DOUBLE LOCK JOINT
THEY CANNOT COME APART

We Specialize on Detail-work. "Vignola" is our Standard for proportions when Architect's details are not furnished.



Clinch you Trade by giving them the very best Columns. Ours have the best Construction and correct shape.

All kinds of interior trim to detail.

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Hornet Mantels

They add 100% to any interior.

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All of our work is made from strictly kiln-dried lumber.



Beam Drops 15" at Ends, 4" in Center

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The solution of the cellar window problem—a modern, 20th Century, Cellar Window made right for service. Made of steel-window, casing and all. No rotting, shrinking or swelling. Fits perfectly all the time. Trouble proof, easy to open and close, leak-proof and fire-proof. Will not rust. Nothing about it to wear out. Fitted with special, inside steel latch—cannot be opened from outside except by breaking the glass. Glass held in place without putty—can be replaced in minute's time.

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BOGALUSA BOGALUSA

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BOGALUSA is the name of the city where the best long-leaf pine that grows is cut into every size from great bridge timbers to little laths.

BOGALUSA, in lumber, is more than a name—it is a symbol of superiority and responsibility.

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And if you don't find "BOGALUSA" stamped on Boards, Timbers and Bundles you'll refuse it as "not per order."

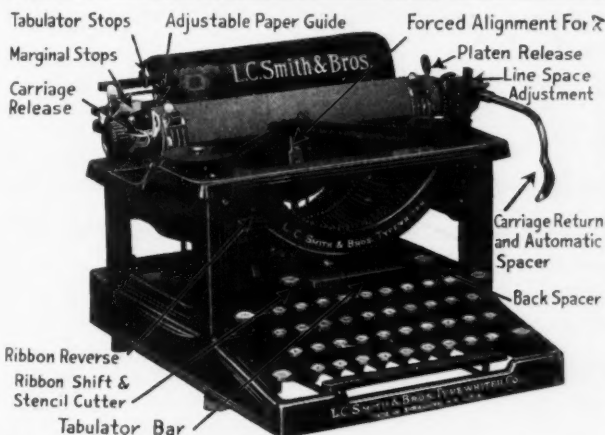
WRITE US. (Cutting 1,000,000 feet a day still leaves us time to take an interest in YOU.)

There's a value for you in the *Bogalusa Book*. (Free.) It's full of valuable pine statistics.

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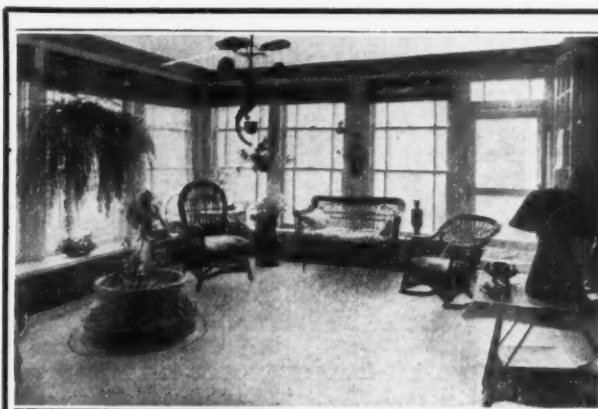
This is absolutely the most generous typewriter offer ever made. Do not rent a machine when you can pay \$2.50 a month and own one. Think of it—Buying a \$100.00 machine for \$48.80. Cash price, \$45.45.

Perfect machines, standard size, keyboard of standard universal arrangement—universally used in teaching the touch system. The entire line of writing completely visible at all times, has the built-in tabulator, with billing devices, the two color ribbon—with automatic reverse and key controlled shift, automatic flexible paper feed—automatic paper fingers, the back spacer—ball bearing carriage action—ball bearing shift action—ball bearing type bars—in fact, every late style feature and modern operating convenience. Comes to you with everything complete, tools, cover, operating book and instructions, ribbon, practice paper—nothing extra to buy. You cannot imagine the perfection of this beautiful reconstructed typewriter until you have seen it. I have sold several thousand of these perfect, latest style L. C. Smith machines at this bargain price, and every one of these thousands of satisfied customers had this beautiful, strictly up-to-date machine on five days' free trial before deciding to buy it. I will send it to you F. O. B. Chicago for five days' free trial. It will sell itself, but if you are not satisfied that this is the greatest typewriter you ever saw, you can return it at my expense. You won't want to return it after you try it—you cannot equal this wonderful value anywhere.

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Send me only \$2.50 a month until the low total price of \$48.80 is paid, and the machine is yours

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and other suitable things for
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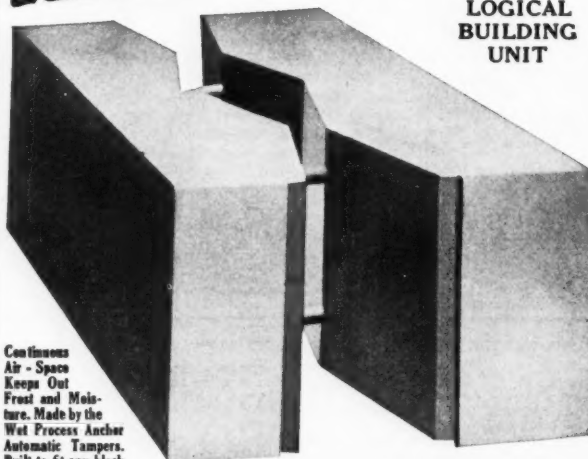
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Whitney Windows with double-glazed sash do away with storm windows—air-tight, storm-proof—afford ventilation when desired. No sticking, slamming or rattling—open outward. Both sides can be washed from inside the room.

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us and we will try to get it for you.

**No Ice Needed—in Winter
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The Herrick Outside Icing Refrigerators
Most Popular for Modern Homes

Saves more ice, gives more space in the kitchen and does away with the tracking of floors.

This refrigerator requires no ice in the winter. It is cooled by cold air. The Herrick is so constructed that a compartment may be opened from the outside of the house. Cold air thus enters the opening, forces circulation and keeps the contents of the refrigerator cold and pure.

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No progressive builder can afford to be without information on this modern convenience. Suggest it to your customers before they suggest it to you. It will add to your reputation as a conscientious, up to the minute builder and will get you more jobs. Write for our free plans and our complete catalog.



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REFRIGERATOR

The Herrick is Approved by Good House
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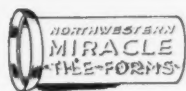
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NORTHWESTERN STEEL & IRON WORKS
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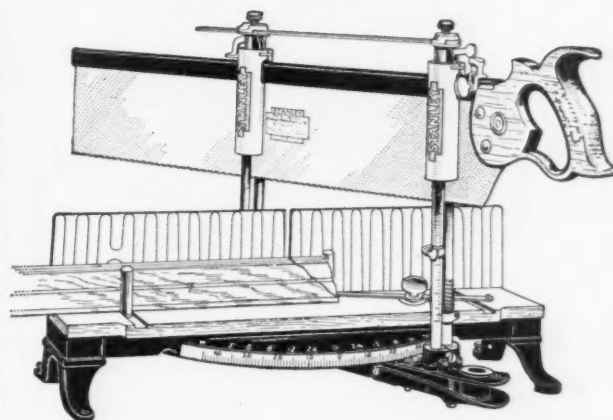
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Stanley Mitre Boxes

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A Few Striking Features

- Saw is held above work when not in use.
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A specially made back saw furnished with each box

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It means a lot to YOU, Mr. Contractor, to have a mixer that will perform the same day in and day out without trouble or breakdowns.

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Their upkeep and repair costs are extraordinarily low. Hundreds of users are very enthusiastic about their Big-an-Little Mixers because they save the labor of four men.



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The Toughest, Strongest
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\$1.50
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WAX HOLE

No. 41 16 oz. Full Polished No. 42 13 oz. Full polished



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Costs Less Than Wood

The demand for concrete porches is bigger than ever. Every home owner is interested. Dunn Porch Molds call for a very small investment, and the price of the complete outfit is returned by the profits on two porches. The same molds will make blocks for piers, posts, chimneys, etc. Prices and other information given in Ornamental Mold bulletin.

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The choice of the most successful contractors. A high-speed, high-efficiency mixer especially made for fast work on stiff concrete for Curbs, Sidewalk, Gutters and Foundations. Light, Strong and Durable. Has Hinged Low Loading Platform only 24 in. high. Power Loader or Batch Hopper if wanted. Sold with our "Money-Back" Guarantee—cash or easy payments—price astonishingly low. Prompt delivery from stock carried in all large cities. Write for catalog today.



MIXES
MORTAR and
PLASTER as
Well as
CONCRETE

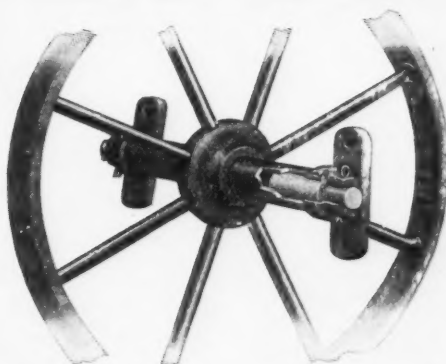
6 and 11 Ft. Sizes

AMERICAN CEMENT MACHINE CO., Inc.,

Keokuk, Iowa

Sterling

The
Contractors'
Wheelbarrow



Sterling

The
Workman's
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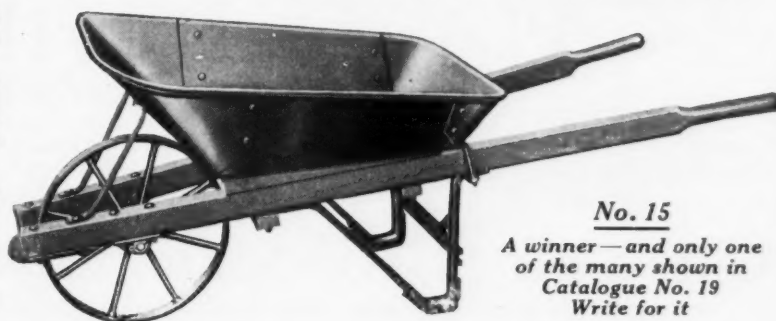
The Contractor Who Buys STERLING BARROWS Has Three Good Reasons Why He Will Buy No Other Make:

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Second—He knows that Sterling Handle Clamps, Riveted Channel Legs and Self-Lubricating Wheels mean "longer life," "greater efficiency," *thus more for the money invested.*

Third—He is sure of a greater tonnage per day, because Sterling Barrows have self-oiling wheels and are properly balanced to lighten the work of his men.

Sterling Wheelbarrow Co.
West Allis, Wisconsin



No. 15

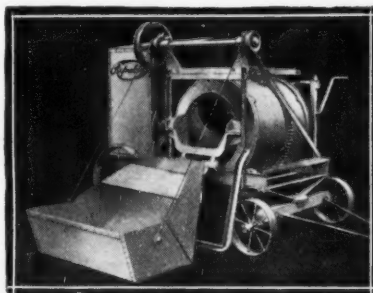
A winner—and only one
of the many shown in
Catalogue No. 19
Write for it

When You Need Men

consult the Opportunity Page of the American Builder. Men—the right kind—are always open for opportunities to advance themselves. Do you want the ambitious kind—the kind that can do things?

An advertisement at 5 cents a word per insertion on the page headed "Opportunities" will put you in touch with such men.

AMERICAN BUILDER, 1827 Prairie Ave., Chicago



This Light Weight Republic

Has Larger Capacity
Power Loaders
or Low Platform

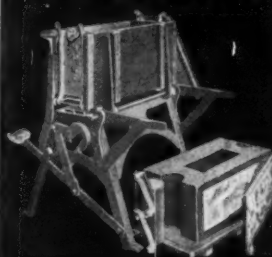
Most mixers have an excess of weight that serves no other purpose than to increase the cost. New improvements and inventions enable us to make this sack size Republic lighter with

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CEMENT BLOCK MACHINE

SOLO ON
15 DAYS' TRIAL

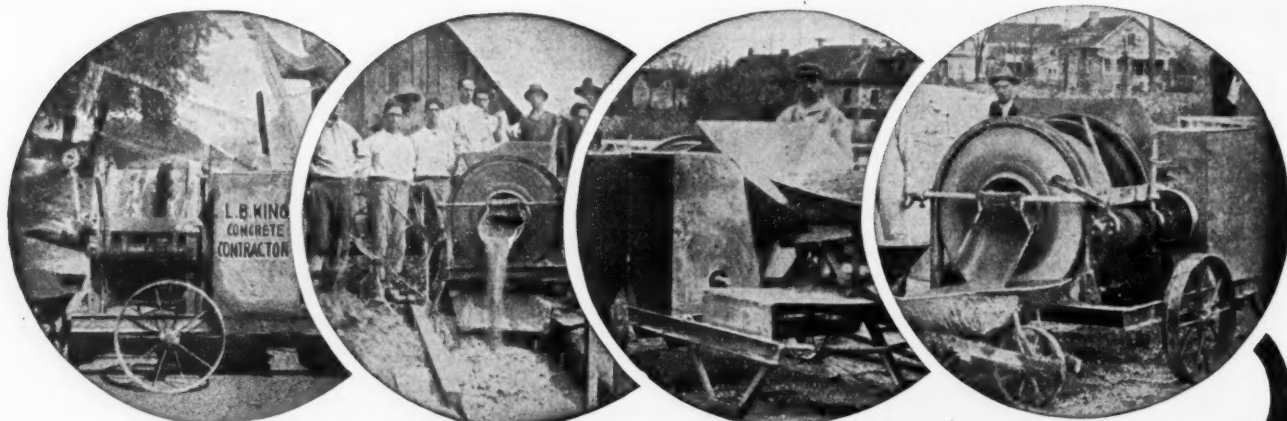


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The price is low but the quality is high. Has a capacity of 150 blocks per day, free from cracks or flaws. Makes all sizes used in standard building construction, and many styles. Easy to operate and long lasting. Write for Block Machine bulletin.

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415 24th St.

Holland, Mich.



Always on the Job--

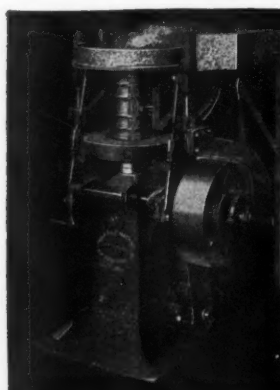
"Little-Devil" Mixer

A Bigger, Better Mixer for the Same Money

Capacity 7 cubic feet of loose material. Low Charging—End Discharge—May be used for Paving, Grouting Brick Pavements, Foundations, Sidewalks and will mix and place concrete quicker and at less labor cost than any mixer on the market. Write today for catalogue, prices and terms.

Chicago Builders' Specialties Co.

1461 Lumber Exchange Building, 9 South LaSalle Street, Chicago, Ill.



DUNN Tile Machine

MAKE MONEY MAKING TILE

COMBINE DUTY WITH PROFIT

Every building contractor can combine duty with profit by helping to supply the demand for cement drain tile. Reports from all sources indicate the scarcity of drain tile. Farmers want tile—urgently. Big crops at good prices has brought them the money to pay for it. They want bigger crops next year; they must have drain tile.

Opportunities abound in every farming community for the manufacture of cement tile.

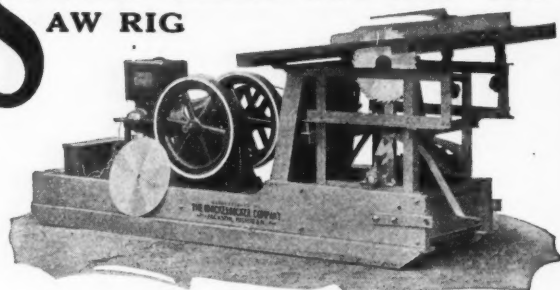
Not hundreds, but actually thousands more plants are needed. Three times as much tile will be bought next spring as the combined tile plants can produce during the winter.

Only a moderate investment is required to install the necessary Dunn tile making machinery which will put you in position to earn big money. Write for information on the tile business and Dunn machinery.

W. E. DUNN MFG. CO. :: 415 24th St., Holland, Mich.

SOLD ON 15 DAYS' TRIAL.

SWING CROSS-CUT AND RIP SAW RIG



We build Woodworking Machinery, Concrete Mixers, Mortar Mixers, Hoists, Pumps
The Knickerbocker Company, 525 Liberty St., Jackson, Mich.

Capacity---Economy

The Frank, low price mixer will produce a full batch a minute. The mixing is always in plain sight and the machine is simple, nothing to get out of order.

Sold in 3, 5 and 7 foot sizes. Every mixer guaranteed.

INVESTIGATE TODAY

Frank Mfg. Co.

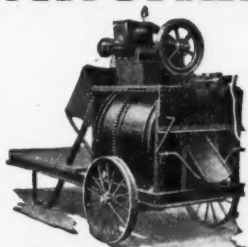
241 Century Bldg.
DES MOINES, IOWA



Inside View, Showing Door for Unloading

WINTER CONCRETING

Demands speed—speed in mixing and speed in placing the wet mix in the forms. The one machine having the greatest speed is the

ARCHER MIXERS

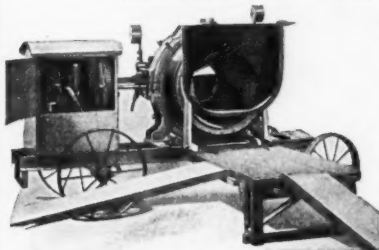
The 30 second mix and the end discharge direct into the form, without any exposed handling, practically banishes all danger of frost in the mixture. For your winter job you must have an Archer. Write for folder of details and prices.

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2441 W. 34th Place, Chicago

The T. L. Smith Company

1138 - H - 32nd STREET

Milwaukee, Wisconsin



MANUFACTURERS OF

Smith Tilting Mixers

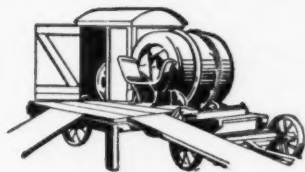
Catalog No. 68-H

Smith-Chicago Non-tilting Mixers

Catalog No. 128-H

"THE STANDARD" Low-Charging Concrete Mixer

Cuts Costs—Increases Production



Contractors all over the country have found that "The Standard" Low-Charging Mixer actually reduces concrete costs one-third.

Our latest catalogue (just off the press) is full of interesting pictures and data. Write to our nearest office today for your copy.

Ask for Catalogue No. 44

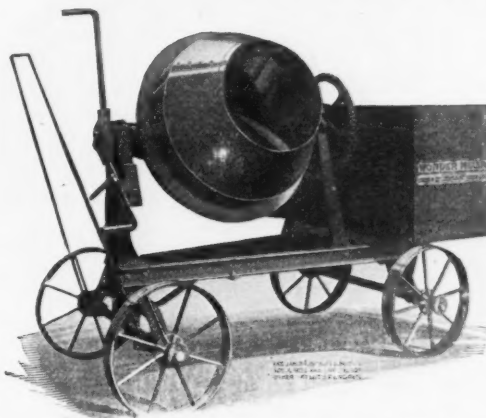
Complete line of Contractors' Equipment, Hoists, Pumps, Engines, etc.

The Standard Scale & Supply Co.

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145 Chambers Street
CLEVELAND
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523 Arch Street
BALTIMORE
409 N. Gay Street

"Follow The Leader"

WONDER JUNIOR—3 to 4 Cu. Ft. per Batch

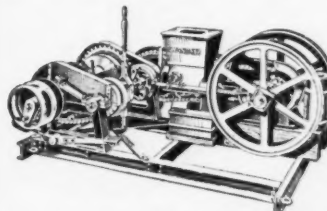
THE BEST guide to Mixer investment is the endorsement of your brother builders whose problems are identical with your own. Upwards of 7000 WONDER MIXERS are in use—many since 1911. Nothing like the enthusiastic endorsement of the purchasers has ever been known in Mixer history:

WONDER

"The Mixer that Makes the Money"

The WONDER JUNIOR is the machine, the original model of which displaced the mixing board and placed thousands of contractors in commanding positions. Steady improvement keeps it ahead of all others in efficiency. Large production and sales make the price a profit-sharing proposition. Strong, speedy, easily operated, easily cleaned. Mixes mortar as well as concrete. Used in basements or upper stories. Gas Engine removable for other purposes.

Built also in sizes 5 to 6, 7 to 8 and 10 to 11 cu. ft. per batch, with or without side loader.

**WONDER BUILDERS' REVERSIBLE HOIST**

Single reversible drum with reversible Elevator Sheave. Hoist drum and Elevator Sheave independent. Two line speeds and load capacities. Ample braking facilities and safety guards. Easily portable, ruggedly built, efficient. Most economical priced. 5-7-9 H. P.

Send for Catalog of Contractors' Equipment

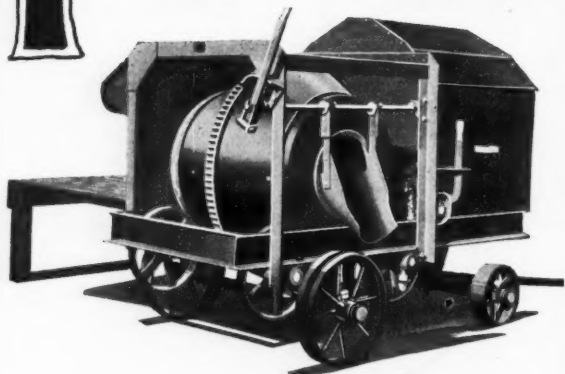
Waterloo Cement Mach'y Corp'n

103 Vinton St., Waterloo, Iowa

Mixers, Pavers, Hoists, Pumps, Backfillers

NEW YORK CHICAGO SAN FRANCISCO

POWER



The Eureka, Low Charger, one of the most powerful machines on the market today.

Built for Business

Capacity 5 to 7½ cubic feet loose material. Low easy charging hopper. A complete line of Batch Mixers, Continuous Mixers, Mortar Mixers and Hoists.

EUREKA MACHINE CO.

103 Handy Street

Lansing, Mich.

Kill three jobs with one stone—

Get a *BLYSTONE*

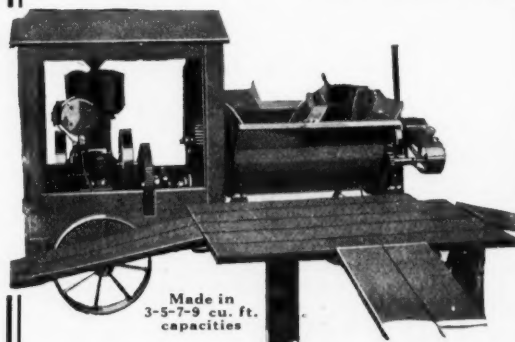
to do *all* the mixing you have to do on your building jobs—the concrete mixing—the mortar mixing—the plaster mixing.

Used by hundreds of building contractors for this very reason—it is the all-purpose mixer.

Send for Concrete-Mortar Plaster Catalog

Blystone Manufacturing Co.

917 Carpenter Street :: Cambridge Springs, Pa.



Made in
3-5-7-9 cu. ft.
capacities

Austin Drum Mixer Features



Wide loader and opening into drum permit fast charging without clogging.

Design of mixing blades such that the mix is carried over on discharging chute very wet, allowing rapid discharge, either entire batch or part.

4-H. P. hopper cooled gasoline engine, or steam or electric power. Twenty gallon steel water tank and steel engine housing.

One position control. Capacity 60 to 80 cu. yds. per day.

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Municipal Engineering & Contracting Co.

Main Office: Railway Exchange Building, Chicago
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RANSOME

Registered U. S. Patent Office

Well Mixed Concrete for Permanence—Ransome for better mixing
(Member National Association of Concrete Mixer Manufacturers)

The Ransome Bantam Mixer line, from the Ransome Bantam Junior to the Ransome Bantam Paver is the most efficient line of mixers ever produced. The Ransome Bantam is practically the American Standard. It means rapidity, efficiency, long life, low original cost, and economic operation. No waste and no time lost. Write for particulars.

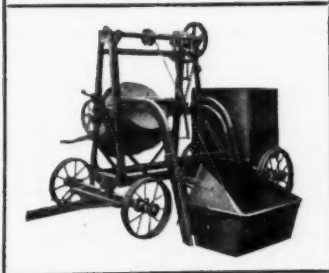
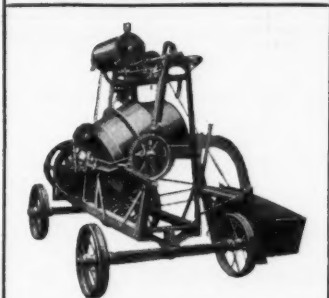
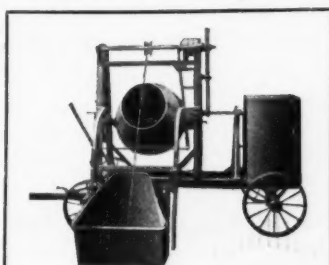
RANSOME CONCRETE MACHINERY CO., 115 Broadway, New York City
Agents in every large City

Factories: Dunellen, New Jersey and Reading, Pa.

THE DAWN OF A NEW NAME



"Built on the Square"



"Sold on the Square"

FOR fourteen years the name STEWART has been identified with the Concrete Machinery business.

Throughout our big plant—at the fairs—on the road—at the Cement shows—in the publications—on the job—everywhere, STEWART has always been in evidence.

Thousands of contractors have met STEWART, talked with STEWART, bought from STEWART and used STEWART products and inventions.

Yet—as a name for a firm and as a brand for a line of Concrete Machinery—STEWART is really a new name.

It's a good name, though—because it stands for honesty, integrity, and a policy of building and selling goods strictly "On the Square."

We thank the thousands of customers who have helped make STEWART a success and write this message as a greeting and an invitation to all readers to get acquainted with STEWART and the STEWART way.

The Stewart Mixer

The STEWART Mixer is a new machine, or rather a new model, built along old principles, by an old firm. In fact, it's built by STEWART with fourteen years of Concrete Machinery building and a lifetime of engineering and contracting experience as a foundation.

It has been tried and tested in every possible manner.

It is a mixer you can count on to start a job and finish a job with a perfect score.

In fact, it is "Built On The Square" and "Sold On the Square" and is guaranteed to give satisfaction.

Five sizes and fifteen styles give you a big line to choose from so you are bound to find a STEWART Mixer for your own individual needs.

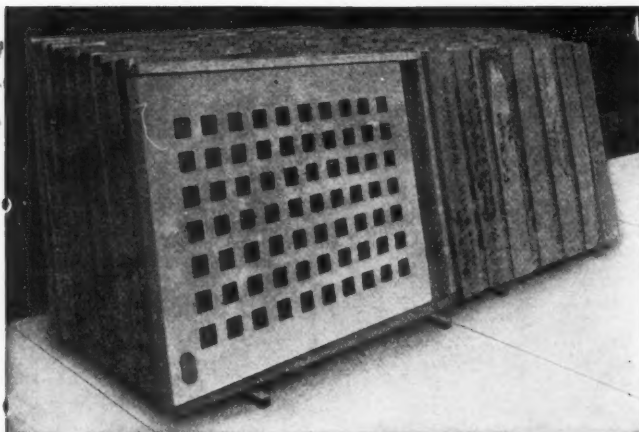
Write today for prices and information. Let us tell you about this machine and the STEWART way.

Stewart Manufacturing Company

Successors to The Cement Tile Machinery Company

46 Rath Street, Waterloo, Iowa

Builders of Concrete Mixers, Block Machines, Block Tempers, Sand Screens, Sand Elevators, Tile Cars, Block Cars, Brick Cars, Dump Cars, Transfer Cars



Labor is Scarce!

Make quick work of your sidewalk light installation by using American 3-Way factory finished SLABS

FORMS, staging, high-priced cement finishers and the attendant muss and trouble is eliminated when

American 3-Way Factory Finished Sidewalk Light Slabs are used. You merely take the slab out of the crate, slip it into its seat in the sidewalk and caulk the joint. ¶ All our lenses are made of specially annealed LAZALITE GLASS with plastic malleable coating on side walls to take care of expansion. ¶ We have several shapes and sizes based on the 3-Way principle.

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American 3-Way Prism Company

Manufacturers of Prism Products, Sidewalk Doors, Coal Hole Covers

Main Office and Factory: LA PORTE, IND.

Branch Office and Factory: Spring and Wooster Sts., New York, N. Y.

Linclad

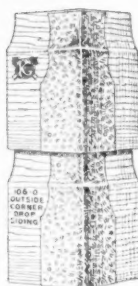
SHINGLE NAILS

Made for wood, asphalt and asbestos shingles in both cut and wire styles. All standard sizes carried in stock for prompt shipment.

*Write for Samples
and Prices*

W. H. MAZE COMPANY
PERU, ILLINOIS

These Points—



Weather-proof and Permanent—Take and Hold Paint—Give Better Appearance—Save a Lot of Work.

These are reasons enough for any carpenter, contractor or builder. But, we might add that they are more economical, too. Millions in use today. Give them a trial on your next building job.

KEES Metal Corners for Drop Siding

Do away entirely with openings that are usually left when corner strips are nailed over the siding.

Made of galvanized iron. Treated to take and hold paint or stain.

Weather-proof. Permanent. Labor-saving.

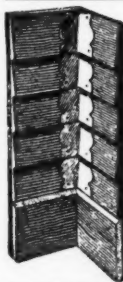
Just one of the KEES line of up-to-date metal building aids.

Write for FREE Samples

F. D. Kees Mfg. Co., Box 552, Beatrice, Neb.

Chief Metal Building Corners

Warp-Proof—Rust-Proof—Fit Anywhere



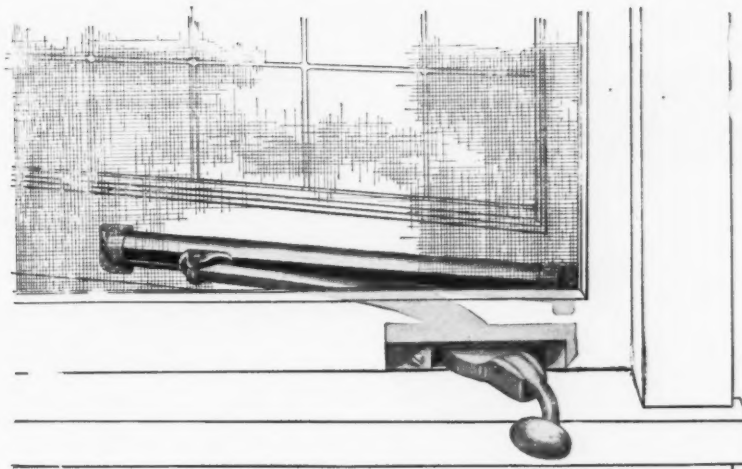
They make a corner with the smoothness and neat appearance of a "mitred corner" and save the time and labor of beveling down the siding. Made of heavy galvanized steel. Fit any corner—inside or outside and make a smooth corner that does not hold dust or moisture. Cannot warp or split, and prevents warping of the siding.

Chief Corners protect buildings from injury and are practically indestructible. Furnished ready perforated for nailing to the siding. Put on easily and quickly. Can be painted any color or left unpainted as desired.

Write for free sample and full information



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G. L. Wilkins, makers of the Wilkins Casement Adjuster, is one of 200 leading firms maintaining exhibits here.

Building Material Exhibit

Entire Second Floor
Insurance Exchange Bldg.
CHICAGO

A Permanent Show of Building Products

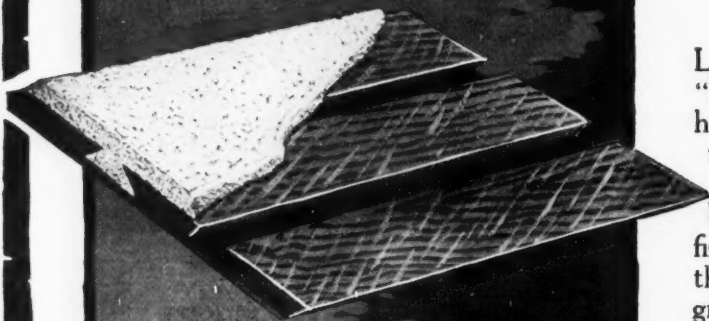
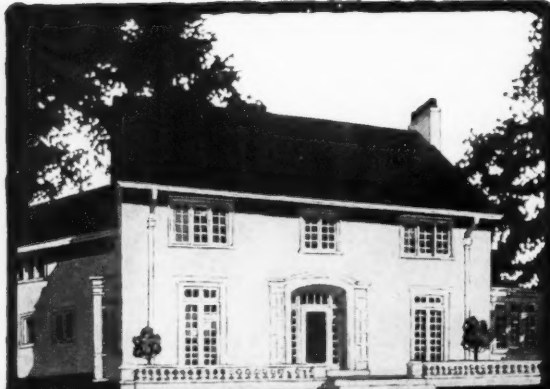
200 Immense Exhibits
12,000 Visitors Monthly

Save Time

Save Money

"Look Before You Build"

It's Free to See



Residence of W. P. Rogers,
Dean, Cincinnati Law School
Lowe & Bollenbacher, Architects,
14 E. Jackson St., Chicago, Ill.

STUCCO is the ideal finish for the artistic home. It is also an economical finish, if properly compounded and rightly applied on a *background that will hold it securely*—that will *not* allow it to break away from its fastenings and crack.

Bishopric Board is the *one* background that, *in actual use*, has fully met these requirements—and it *cuts the cost* twenty-five per cent. It's a scientific combination of building principles as old as the pyramids.

Bishopric Board is made of dove-tailed lath that *clinches the stucco*; the lath are creosoted to preserve them, imbedded in asphalt-mastic, which is a perfect protection against vermin and dampness, and backed by heavy fibre-board through which neither sound, heat nor cold can penetrate.



Let us send you free samples and our book "Built on the Wisdom of Ages." It illustrates homes, apartments and buildings of all kinds using Bishopric Board. It contains scientific tests with letters from architects, builders and users; and it gives facts and figures to prove that Bishopric Board is both the best and the most economical background made for the stucco-finished house.

The Bishopric Manufacturing Co.
903 Este Ave. - Cincinnati, O.

Blue Prints From the Lumber Dealer

A SHORT TALK, NOT ON "ARCHITECTURAL ETHICS" BUT ON SERVING THE PEOPLE, BY THE EDITOR

WE were considerably worked up the other day when a new book on Farmhouses came to our desk, and we saw that the author has made no mention in it of that handiest and most used source of home-planning information, the local lumber yard office.

It riled us all over to see the Kansas farmer advised (in effect) to journey to New York City and lay his little home-building project before a real architect, if he wanted real action on the proposition.

As it happened, we were acquainted with the author of this book, and knew what a level-headed, sensible chap he is, and how thoroly qualified he is to write on this particular subject of Farmhouses. So we concluded it was merely an oversight that the local sources of building plan information were thus ignored—and decided to take our pen in hand and write him about it.

Here are some parts of the letter that are of general interest:

"I am just a little concerned about your several recommendations and illussions thruout this book relative to architectural services. You would have the farmer consult with 'a specialist in this kind of work,' meaning, I presume, a professional architect in the distant city. This is a very high ideal, *too* high, I am afraid, for one farmer in a thousand to attain. In the first place, this high-grade architect lives too far away—the farmer doesn't know him—doesn't know how to reach him, and when he does reach him finds that he is not interested in 'a little farmhouse job.' The architect's fee is a certain percentage of the cost of the building, and he can't possibly make this percentage high enough to make it worth while bothering with any medium cost dwelling house or farm building.

"It is our observation that the professional architects want the big city work, but don't want to bother with country work, except, of course, the big millionaire estate jobs. They can't afford to bother with the ordinary seven or eight-room dwelling house. There are very few architects in cities of less than 20,000 people.

"What, then, is the proper source of home planning information and assistance for the average farmer and small town man? We maintain that it is the local builder, and also the local retail lumber dealer.

"Next to the local builder, the retail lumber dealer is undoubtedly the biggest factor in farm building improvements. It will surprise you to learn how many dealers maintain what they call a service department, which furnishes working plans for houses and barns. For the most part, these designs are taken from plan books



Four Popular Plan Books Much in Use By Lumber Dealers for Promoting Building Construction.

and magazines and changed around a little to fit the particular needs of the customer. In your chapter on 'ready-made plans' you don't mention this greatest use and value of the stock plan. The lumber dealer uses it as a starting point, the basis on which to figure with his customer and get a definite idea of what the customer wants and needs. Then it is a simple matter to draw up the revised plans.

The lumber dealers are co-operating with the local carpenters and builders in furnishing working plans for a great variety of up-to-date buildings; they are distributing farm building books among the farmers, illustrating good farm homes and barns; they invite the farmer to drop in and talk over any improvements contemplated. In a word, the retail lumber dealer and the local carpenter and builder are right on the job and are doing all they can to promote building improvements."

Editor AMERICAN BUILDER.

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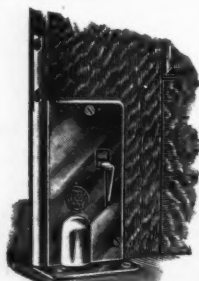
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TRADE
MARK

SPRING HINGES REPUTATION

Do you specify a spring hinge with distinctive features which will appeal to your client and assure satisfaction to all concerned?



Chicago "Relax" Spring Hinges

are in great demand. They are substantial in construction and readily applied. The EXCLUSIVE FEATURE of spring action release, allowing the door to be placed at any desired position and automatically re-engaging when the door is closed,

is of recognized merit and utility.

Send for Catalogue C32. It fully illustrates and describes the most complete line of Spring Hinges manufactured

Chicago Spring Butt Company.

CHICAGO



NEW YORK



Rufus D. Wood, Architect, Pittsburgh, Pa.

Read what this Architect says about his own house, which is stained with

Cabot's Cresote Stains

"The shingles of the roof and second story are stained with your brown stain and the plaster on the outside columns with your white Waterproof Cement Stain. A number of the shingled houses in my neighborhood have been stained with creosote (?) stains manufactured by local concerns and their colors are very muddy and disagreeable and do not seem to stand the weather, while mine has retained the original nut-brown color which I desire." (Signed) RUFUS D. WOOD.

Cabot's Stains have been the standard for more than twenty-five years, and are specified by nine-tenths of the architects, who know them from experience. Their colors are soft, rich and beautiful, and guaranteed fast. Their vehicle is Cresote, which thoroughly preserves the wood, and they contain no kerosene or other cheapener. Why experiment with unknown stains, when you are sure of Cabot's?

Cabot's Stucco Stains

are the only artistic cement finishes. They give soft, natural coloring effects, without covering the surface with a painty coating. They are also cheaper than coatings and easier to apply, and they cannot crack or peel.

You can get Cabot's goods all over the country. Send for samples and name of nearest agent.

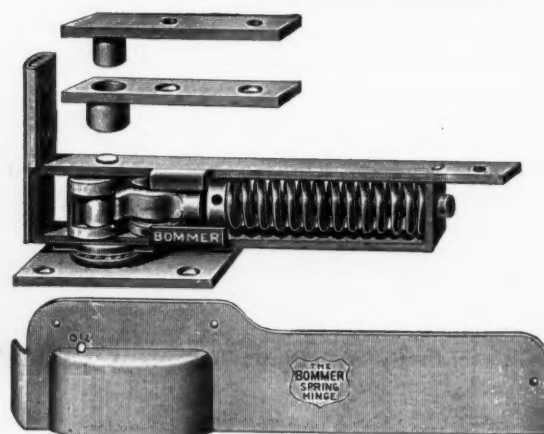
SAMUEL CABOT, Inc., Mfg. Chemists
BOSTON, MASS.

1133 Broadway, N. Y. 24 W. Kinzie St., Chicago
Cabot's Conserve Wood Preservative, Stucco Stains, Brick Stains, Damp-proofing.

BOMMER

Floor Surface Spring Hinge

Double or Single Action, Holdback, Ball Bearing. Every moving part of this hinge can be oiled from a single hole on outside of side-plate.



The most durable hinge of its type; holds the door open when swung to 90 degrees at either side

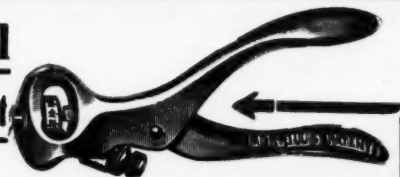
Your Hardware Merchant Can Supply Them

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Worth Much to You

Morrill

Saw Set



All master carpenters are using this Saw Set. In one operation it takes out the wrong set and puts in the right one. Write for FREE booklet "Saw Points". It tells how to properly joint, set and file hand saws.

CHAS. MORRILL

84 Lafayette Street
NEW YORK

BUILDERS' HARDWARE



No. 546—1½ in. Ant. Cop. Fin. Spring Hinge. Per set.....\$1.20
Weight per set, 4 lbs.

No. 6—Builders' Hardware Catalog sent free. On account of market conditions, we are unable to issue net price list. Send us your hardware list for quotation.

We do not sell to carpenters or contractors in Cook County, Ill.

Rehm Hardware Company
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November, 1917

No. 2

Some Figures on Building

STATISTICS compiled by many leading authorities indicate that the war has proven a great stimulus to general building operations in the United States. Government construction has attained enormous proportions, and certain factory work is going on in large volume. On the other hand, the erection of dwelling houses and other similar structures has fallen off appreciably.

Discussing the present situation and the building outlook, Roger W. Babson, the well-known statistical authority says:

"Many clients have inquired regarding the effect of the war on building. The following table answers this question more clearly than words. The war will very seriously affect many lines of building, but is stimulating Government and certain factory work. . . . Reports from England show a large volume of factory work, both new and remodeling, together with a large amount of Government construction. Builders and dealers in builders' supplies who have adapted themselves to the new conditions, are fairly busy. Residential construction in England has been almost eliminated since the war began, except for the building of workmen's dwellings in certain industrial centers. Work not necessary to the war has been suspended. In the United States the readjustment

doubtless will not be as radical as in England, but the tendency will be the same. Clients should plan accordingly.

	Building Started		
	August, 1917	July, 1917	August, 1916
Residential	\$ 22,701,000	\$ 22,828,000	\$ 35,433,000
Manufacturing	18,823,000	19,593,000	12,083,301
Miscellaneous	63,646,000	78,300,000	57,616,375
Government War Const.	48,393,000	38,851,000
Total	\$153,563,000	\$159,572,000	\$105,132,676

	Building Projected		
	August, 1917	July, 1917	August, 1916
Residential	\$ 25,838,000	\$ 23,283,000	\$ 38,341,000
Manufacturing	22,234,000	14,690,000	28,438,000
Miscellaneous	88,953,000	69,490,000	83,883,000
Government War Const.	17,241,000	41,614,000
Total	\$152,266,000	\$149,077,000	\$150,662,000

NOTE—The above figures represent all building in the northern, central and eastern sections of the country, which constitutes about 45 per cent of our total population. The item "Government War Construction" includes only Government work incidental to the war. Regular Government building is not included in the items.

**Quick Silo Delivery**

A KENTUCKY lumber company has provided farmers in its territory with dozens of silos by delivering them on telephone order quickly by motor-truck service within a radius of 50 miles. One merit

of the wooden silo is the rapidity with which it can be put together. Two men are sent with the motor truck to help erect the silo, and the service has been of great assistance to farmers where failure of a forage crop made it advisable to put the corn crop into silage instead of letting it ripen. The silo is a great factor in stabilizing the farm yield of live stock and dairy products.



The High Cost of Rats

A NEWS item reports that a Delaware farmer found that rats had eaten more than 100 bushels of corn in his barn, valued at \$190. He organized a rat drive with boys and dogs, and in one day rounded up and killed 800 of the animals.

We can make a pretty good guess at the sort of a barn his was. Let him put in a concrete floor and make the lower side walls snug and tight, as they should be, and he'll not be troubled by rats.

The rat waste of food is serious. It can be stopped by builders. The cure is to make all buildings rat proof.



Carpenters on War Work, Farmers Do Own Building

WHILE up in the northwestern part of Iowa several weeks ago, I found a peculiar condition among the farmers of Emmet County. I visited quite a number of farms and found considerable building going on; but sad to relate carpenters and contractors were not doing the work.

On one farm the owner, with the help of a neighbor or two, was starting an eight-room house. They were pouring concrete for the foundation (using dirty sand and pit run gravel, throwing big stones into the forms ever so often, etc.) and said they expected to do the whole job of building, except inside finishing.

On another place they had just finished a two-story granary built by the owner; had a cup elevator, etc. This job was pretty well done as far as I could see, except that the building was wrongly located. They had it on the side of a hill and when spring rains come, the water will rush right thru the lower part of the crib.

In this section the contractor does very little buying. The farmer goes to the dealer, con-

tracts for the material and hires a builder and his gang at so much per day and board to do the work.

Talked with a number of lumber dealers, and they report a big business.

I spent considerable time in Emmet County about 10 years ago, and it certainly was a revelation to get back there. New modern barns, houses, silos, etc., have replaced the tumble-down shacks of 10 years ago.

Farmers who 10 years ago were poor and struggling along, now own big buildings, big cars, etc.—L. H. REICH.



They Couldn't Leave the Old Home, So Moved It

IT is not an uncommon sight to encounter a house upon rollers in the middle of a street and in the process of being transported to a new location some distance away, but it is seldom that a house is taken in pieces, the parts transported 1,850 miles, and once more put together again. This is exactly what has happened, however, with the residence of J. E. Storer of Los Angeles. The Storer family recently decided to make its home hereafter in Edmonton, Canada, and for some reason, not generally known to the public, they took their house with them. A corps of workmen was engaged, the house taken down piece by piece, each carefully marked and done up in neat bundles, and loaded upon a steamship for transportation to Vancouver, and thence by rail to Edmonton. It will not be long, therefore, until an American frame house, built of American lumber from floor to shingles, appears in a Canadian city as the residence of the Storer family.



Big Sticks

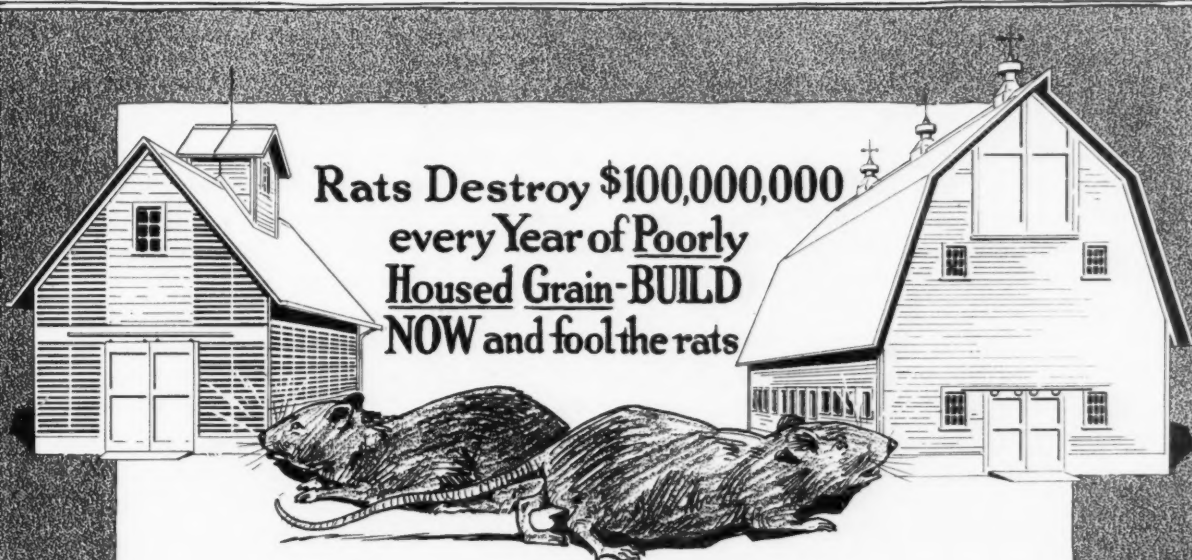
SHIP masts 136 feet in length and 26 inches in diameter are big sticks of timber, especially when they are to be shipped to Cape Town, South Africa. Four masts of this size are being turned out by Robt. McIntosh, a pioneer shipbuilder of Portland, Ore.;

and they are among the longest ship masts ever built on the Pacific Coast, if not anywhere in the world. They are free from the slightest blemish and constructed of Douglas fir timber, which grew on the Cowlitz river. Six booms and four gaffs are also being built.



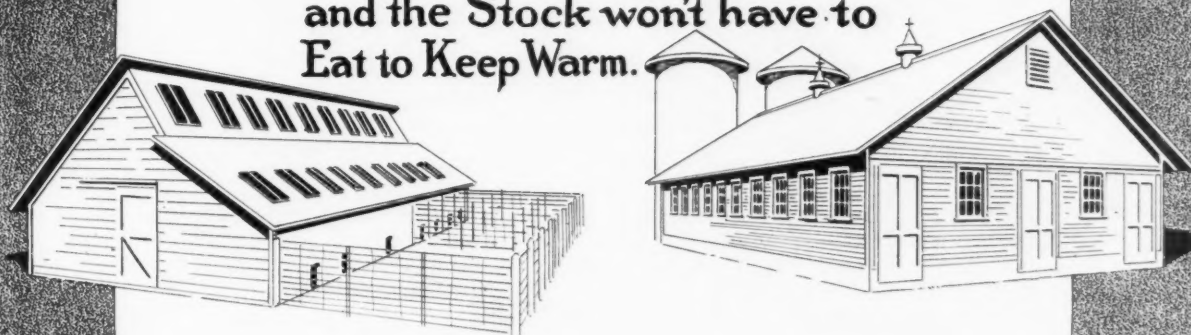
Buy or Build Now While You Have the Money. No Other Form of Investment Brings so Much Real Satisfaction.

3 Reasons for BUILDING NOW



**Rats Destroy \$100,000,000
every Year of Poorly
Housed Grain-BUILD
NOW and fool the rats**

**DON'T USE \$1.10 CORN FOR FUEL!
Build a Warm Stable and Hog House
and the Stock won't have to
Eat to Keep Warm.**



**DO YOUR BIT! - Furnish a
proper building to take
care of every pound
of Food Stuff**



Get Out Those Blueprints and Have the Material Bill Figured Again. Building Costs Are Really Modest by Comparison in This Era of High Prices.

The Building and Loan Association and Community Development

IMPORTANT PLANS PRESENTED BEFORE A JOINT MEETING OF INFLUENTIAL LUMBER DEALERS AND THE TRADE EXTENSION COMMITTEE OF THE LUMBER MANUFACTURERS, AT CHICAGO, OCT. 9TH

By J. R. Moorehead

Sec'y Southwestern Lumbermen's Assn.

IT is in the breast of every well-balanced man to own a home. Particularly is this true when he becomes the head of a family. This desire is no greater in the head of the family than in his wife, and their growing children. This has been true in all ages, whether this home has been a tent of grass or skins, a stone house carved in the cliffs, an Indian tepee, or a modern bungalow—the desire has been the same.

In this short discussion we have no time to argue as to whether or not the Building and Loan Association has been a success. We have only to point to the city of Philadelphia, which is known as the city of homes, due to the early development of the Building and Loan Association. Other cities and states such as Ohio, have so progressed in this direction that

detail as to the form and manner of conducting such organizations.

We take this to be one of the most opportune moments in which to discuss the possibility of the Building and Loan Association, insofar as it will increase the sale of lumber and building material and thus promote our business.

It certainly should be the aim and purpose of the retailer, not only to secure the lumber bill in sight, but to do and perform those things which will bring business in the future. If we have not this foresight and eye to the future, then we have missed one of the principal factors in the success of our business. Only in well-laid plans for the future can we hope to succeed, and it is with this in view that we lay before you under this caption some suggestions which appear to afford a means of co-operation that will result in greater and better business for all branches of the trade in years to come.

In the success of a properly conducted Building and Loan Association, we can see the success of those agencies now being employed to promote the sale of lumber and building materials. Plan books and selling helps will become more valuable and indispensable when we provide the finances.

The great problem in most communities is that of securing funds by those not in possession of sufficient finances to obtain their own homes. Banks do not

and cannot lend money on long time to home-builders. Funds are not obtainable from other sources for such purposes, except occasionally, from private sources. The deposits in the savings banks may reach the millions, but these small earnings are not available for the purposes indicated in this discussion, particularly the obtaining of funds for the building of the small home for the wage earner, the clerk, and the business man in the small community, without sufficient funds. To create sufficient funds, therefore, seems to be the problem and the Building and Loan Association is the only means whereby an accumulation or collection of



The Building Interests in Any Community Can Afford to Donate Office Space and Clerical Hire to Get a Building and Loan Association Started—Because of the Benefit It Will Prove to the Building Business.

hundreds of millions of dollars are loaned largely for the purpose of procuring homes for those who could not otherwise be able to obtain loans and, thru co-operative efforts, satisfy their desires.

There are many plans. While the fundamentals are much the same, yet there is a wide difference in

small earnings can be obtained upon terms equitable and possible to the borrower.

The other difficulty seems to be the lack of anyone in the average community with sufficient knowledge of details to inaugurate and start a Building and Loan Association. We believe it is possible for the two organizations here represented to solve this problem and we shall summarize at the close of this discussion.

Personally, we have always depended more upon experience than theory as to how problems of this kind should be solved. Thirty years ago, in my home

and at least one lumber yard in my community immediately began to get beneficial results from this organization, tho only 30 days old. During the 30 years of the existence of this organization, so far as I recall, the association has suffered but one financial loss, and that an amount of less than \$400.00, which means



town, I was one of the promoters of a Building and Loan Association. For five years previous to my taking up secretarial work, I was the secretary of this association and conducted it in my lumber office. Today that association has assets to the amount of \$490,000. The expense for the past year (the largest business in its history) was, including salaries and for every purpose, \$2,418.00. I do not recall a bank with a like capital and assets which conducts its business for an expense equal to three times this amount. The very first loan made by this association in 1887 was for the purpose of building a home for a blacksmith

practically that in the 30 years' business, this association has lost nothing because of bad loans.

In this connection we may say that in the Building and Loan Association the moral hazard is practically eliminated and the moral security is practically as great as the real estate for the reasons I enumerated at the first, in that it is in the breast and desire of every man to own his home, and thus the security is increased.

When this organization was first started, there was intense opposition on the part of the banks of the community, it being intimated that a scheme was being started to lose a considerable amount of money of working people, who could ill afford to lose it. There was fear, no doubt, that it might interfere with bank deposits. It does not. On the other hand, it increases bank deposits. Small sums come out of socks, tin cans, etc., and thereby get into the banks. The answer to that was that within three years from that time, every bank in the community had a candidate for treasurer of the organization.

We are not prepared to say just the number of homes which have been erected thru the money obtained thru this co-operative effort, but we can safely say that the lumber and material men of the community, where I formerly lived and still own a yard, have had their business increased anywhere from ten

to forty thousand dollars each year by reason of its existence and had not such an organization been formed in my town when it was, the community today would not have reached that stage of development which it has; the mechanics, and laboring people, and business men as well, would not have been living in their own homes and not paying rent, as they are today, and, further, I should not have continued in business there as I have.

The community, if it had improved to any extent at all, would have been one largely controlled by landlords, instead of home-owners. Now, hardly anyone lives in a rented house.

In every state, north, south and west of Ohio, the Building and Loan Association has not developed to any appreciable extent, as compared with some of the eastern states. We, therefore, have the great West as a field for co-operation in promoting these organizations, and thus promoting our own business.

In Missouri alone there are seventy-five towns large enough to maintain a Building and Loan Association. In many of the towns where such organizations are already located, there is room for more. This applies not only to the town of from five to ten, or twenty thousand population, but even to the larger cities. Supervision by state authorities has practically eliminated wild-catism in the Building and Loan Association. In most of the states the same supervision and inspection that governs the State Bank is provided for the Building and Loan Association. So far as I know there has not been a failure of Building and Loan Association in Missouri in fifteen years, and this will apply possibly to other states. In other words, the possibility of loss has been reduced to a minimum.

My proposition, therefore, to the combined lumber industry of the country, to the manufacturers and the retailers, is this—provide a proper number and finance a sufficient number of men with sufficient knowledge to go into any community and properly guide those interested in the organization and installation of a

Building and Loan Association. I do not mean that the National Lumber Manufacturers' Association should bear all of this expense. Any retail lumberman in any community where an association is established can afford to pay out of his own pocket at once anywhere from \$100.00 to \$500.00 in order to properly start, under proper instruction, such an organization. If by the investment of such an amount, an additional

business of five, ten, or perhaps twenty thousand dollars in a year can be secured for his yard, what better investment has he, or can he ever make? I have often been requested to go to other states and talk to communities on this subject, which shows there is already interest in the plan.

My own experience is the warrant for making such a statement and such an appeal. There is everything to gain and nothing to lose. If I were the owner of ten, twenty, fifty or one hundred retail lumber yards, I should employ the best Building and Loan man obtainable and have him make a survey of every community where I owned a yard with a view to establishing a Building and Loan Association therein. I would call together my competitors and other business men, including the local newspaper men,

in the community, who are as much interested as is the lumberman, and present the proposition to them in a practical, straightforward, business way. If I could be sure of the co-operation of my competitor, well and good; if not, I should proceed on my own account, and install an association in my lumber office. Any retail lumberman who is looking to the future cannot but see that this would be building a future business.

In such states as Ohio and Pennsylvania, there could be obtained, no doubt, many men who would be more than glad to undertake such work under such guarantee as the National Manufacturers' Association could make, and these men could be sent out and used wherever the retailer showed a disposition to co-operate.

This is the proposition we have to present to you.

(Continued to page 138.)



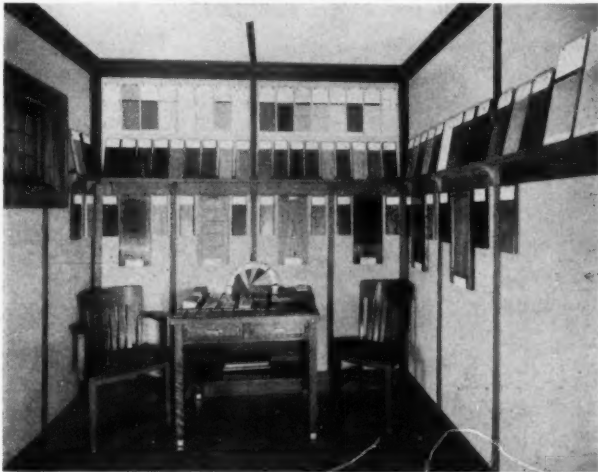
"A Home for Every Family" Should be the Motto of Lumbermen and Builders.

Display Goods to Encourage Business

THIS IS NOT THE TIME TO STAND BACK AND WAIT FOR BUILDING ACTIVITY TO DEVELOP. ADVERTISING IS THE MOST EFFECTIVE AND MOST ECONOMICAL FORCE WHICH DEALERS HAVE TO DIRECT AGAINST ABNORMAL CONDITIONS. THE PROPER DISPLAY OF GOODS IS EFFECTIVE ADVERTISING. STUDY THESE SUGGESTIONS AND APPLY THEM TO YOUR OWN BUSINESS

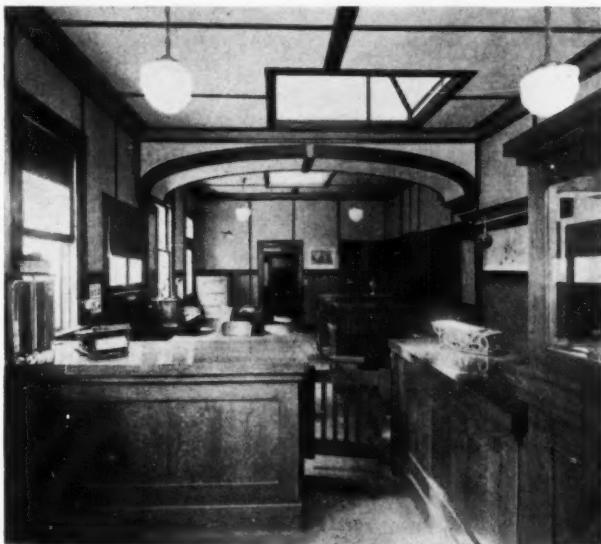
THE last page of history has been written recording the events of the period during which the dealer in building materials and equipment filled up his shelves, stock rooms, yard or sheds and then settled down in his office to await developments. During the period which has already found a begin-

Dealers in building materials and equipment all over the country are awakening to the necessity of this development. They are realizing that the encouragement of building activity rests almost exclusively in their hands. They are realizing that not only their own welfare, but the welfare of the entire industry is



An Efficient Display and Consultation Room in the Service Department of Messrs. F. T. Coppins & Son, Inc., Buffalo, N. Y., Distributors for the Bridgeport Wood Finishing Company. This Aptly Illustrates the Modern Method of Selling Paints and Wood Finishes with Equipment That Shows the Actual Goods and Full-size House Trim, Model Morgan Doors and Wall Board.

ning, this dealer will be as well known to the people of his community as the dry goods man or the grocer and the articles which make up his stock will be held just as persistently to their attention as those of his fellow business men.



Interior View of the Office of the Gebhart-Winchet Lumber Company, Dayton, Ohio. Here Is a Practical and Effective Display of Beaver Board Which Gives the Prospective Buyer the Information Which He Wants—Shows Him How This Material Will Look When It Is Installed in His Building. Incidentally, Notice the Dignified and Business-like Appearance of This Office.



A Commendable Suggestion for the Display of Garage Hardware Made by the Stanley Works, New Britain, Conn., to the Dealers Handling This Line of Hardware. The Photograph Was Taken in the Sample Room of the Stanley Works.

dependent upon the extent to which they are able to encourage building.

What are some of the things which the dealer can do to encourage building? Perhaps the most logical initial step is to fit out the office, sales room, display room or yard so that the prospective builder may be shown the various materials and articles of equipment to the best advantage. All people are influenced by their surroundings. The man who is thinking of building a home or a barn or a store building should not be discouraged by finding that the dealer from whom he expects to obtain his materials cannot show him what these materials are or what choice he has in their selection. The dealer's place of business must be filled with building ideas.

The exterior appearance of the office or store should, of course, be as attractive as possible. It is an advantage to have a building specially designed so that the appearance may be made novel and suggestive of

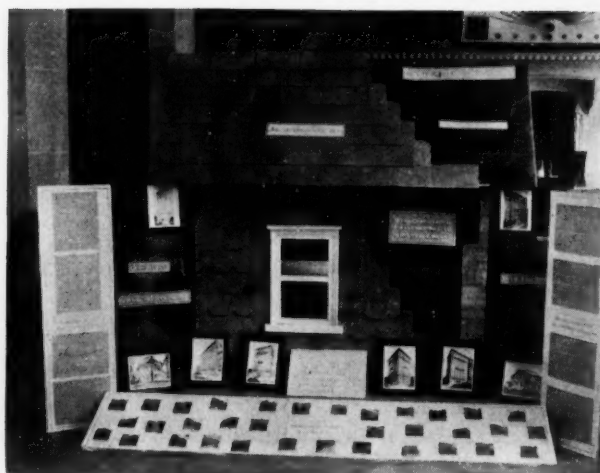


End of Display Room of the Pacific Building Materials Company, San Francisco, Cal., Looking Toward Offices. Wall Display Boards Are Effective for Showing Samples of Various Stains. The Value of Pure White for the Walls Behind Display Boards Is Shown Clearly in This View. The Consultation Desk with Literature Near at Hand Is a Very Important Feature of This Room.

View Showing Several Effective Methods of Displaying Building Materials, as Used in the Display Room of Materials Company, San Francisco, Cal. Notice That Wherever Possible the Materials Are Shown as They Would be Used in the Building. These Exhibits Answer the Questions, "How Is It Built?" "How Does It Work?" "How Does It Look?" and the Salesman Has Something Definite to Work with.



Display of Pratt & Lambert Goods in Window of the Globe Manufacturing Company, Peoria, Ill. The Carefully Finished Miniature Entrance Attracts the Eye, While Posters, Pictures and Cans of Varnish with Their Labels Clearly Showing Complete the Thought Which the Display Is Intended to Give.



Miniature Building Used in Connection with Photographs and Panels to Display Some of the Building Materials of the H. W. Johns-Manville Company. This Sort of an Exhibit Has Instructive Value in Addition to Advertising Value. It Not Only Shows What the Materials Are, But It Also Shows How They Are Used.

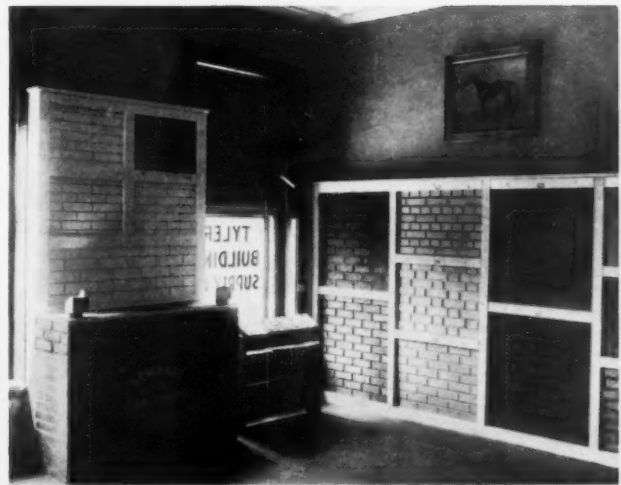
high grade building. This building should have as large a display window as space will permit. It should have a well-lighted display room adjacent to and connecting with the office proper, in case business is carried on thru an office. If the building is a store in which the stock is all carried in one room, the shelving and other fixtures should be arranged to facilitate display of goods and a portion of the floor space near



A Window Display of the Products of P. & F. Corbin in a Prominent New York City Hardware Store. This Is a Good Example of Hardware Window Display Because the Arrangement Has Emphasized the Qualities of the Product. There Is a Tendency in Hardware Display to Crowd the Pieces Together to the Point of Confusion. Proper Spacing and Proper Distribution of the Chief Points of Interest Should Be Studied by the Window Trimmer.

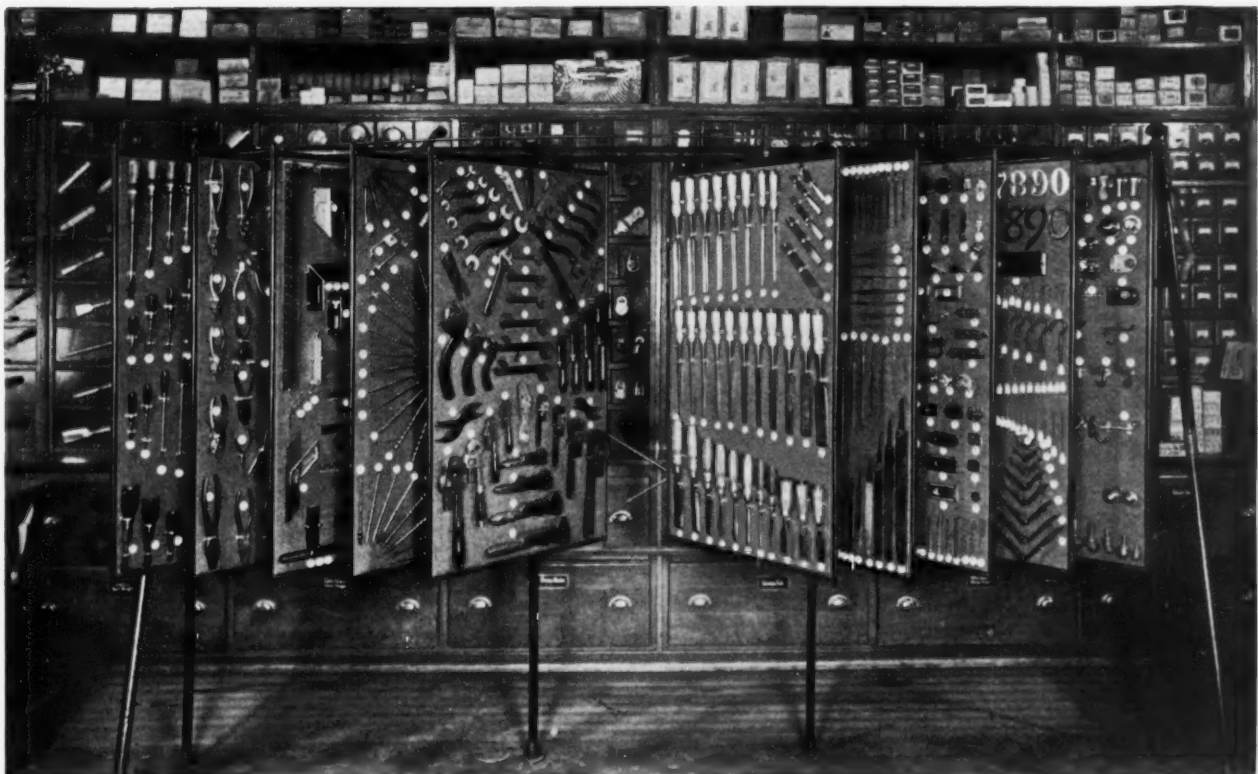
the front should be fitted for purposes of special display.

The dealer who devotes a portion of the space in his office building to a display room is taking a big

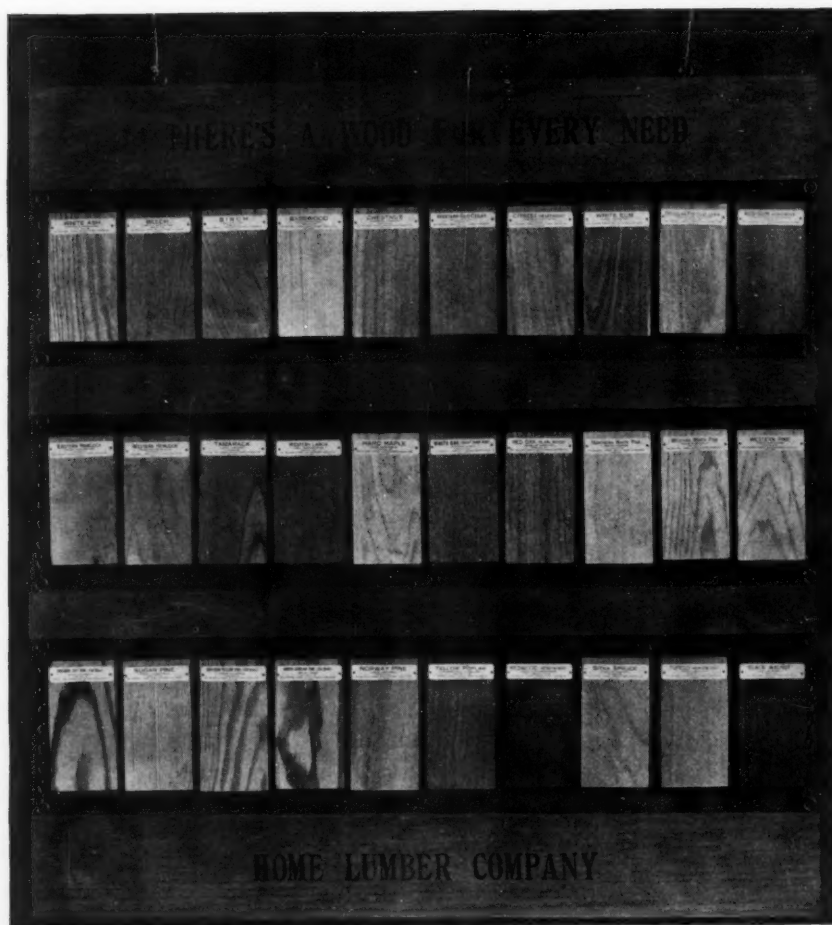


Neat and Helpful Display in the Office of the Tyler Building Supply Company, Louisville, Ky. Brick of Various Types Are Shown Laid in Several Bonds and the Kewanee All-Steel Coal Chute Is Shown Installed in a Section of Brick Wall.

step in advance. If his stock includes wall board, this display room is a good place to show prospective builders how it is most effectively used. There should be a table or desk in the room with literature and printed advertising matter nearby. The arrangement of the exhibit should follow a logical scheme; that is, the materials used in the construction of the walls of a building should be grouped together, the roofing materials should make up another group and so on. If display boards are used, they should be placed where the light is good and their elevation should be near eye level. There should be plenty of space



Display Fixture Which "Sells the Goods" in the Store of the Thomas Hardware & Cutlery Company, Chicago, Ill. This Type of Fixture Is Manufactured by the Multiplex Display Fixture Company, St. Louis, Mo. The Prospective Purchaser Would Rather See the Goods Than a Picture and His Examination of Such a Display Will Often Result in the Purchase of More Than the One Article Which He Had in Mind.



An Exhibit of Thirty of the More Important Woods. These Specimens Are Furnished to Lumber Dealers at Less Than Cost by the National Lumber Manufacturers' Association. Each Sample is $2\frac{1}{2}$ by 5 Inches in Size, Shellacked and Labeled with Both the Common and Scientific Names. Everyone Who Wishes to Build Is Interested in Woods and Every Dealer Should be Ready with the Information, which Is Most Easily Given with the help of Samples Such as These.

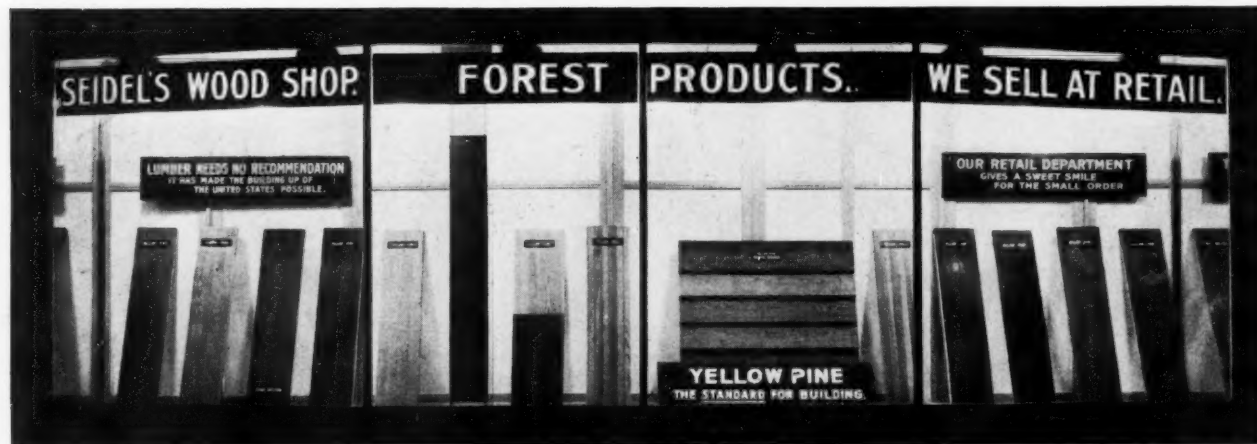
around working models. A number of clever displays may be worked out by the dealer and made a part of the building. For instance, a section of an interior wall of the display room may be devoted to panels of brick. Another section may be used to show the various types of wall construction for which materials are carried in stock, by stopping the plaster and leav-

ing the wood lath, metal lath, plaster board or other materials exposed for a short distance. A movable rack may be built which will show all of these. In such a rack, only one side of the "studs" are finished so that the manner in which the plaster is keyed to the wall is shown on the reverse side; only a portion of the surface is plastered so that the method of attaching the materials to the studs is shown. Models always attract attention and they provide something definite for the salesman to work with in making a sale. A display may often be arranged so that it will serve a number of purposes. For instance, in displaying a set of garage door hardware, a large case with shelves may be built having a small set of garage doors fitted to it with the hardware installed. The shelves may be used to store the stock of garage door hardware, the wood in the doors is displayed and the finish which they are given is also effectively shown.

It is effective to display small articles which are used for a similar purpose on a group of swinging panels or in some similar manner so that they may all be easily seen and carefully inspected. This type of

display often results in the sale of more than the particular article which the purchaser had in mind when he entered the store. The same principle may be used in the arrangement of shelf stock. Group related articles together; avoid confusion and untidy appearance.

A further consideration regarding the display room

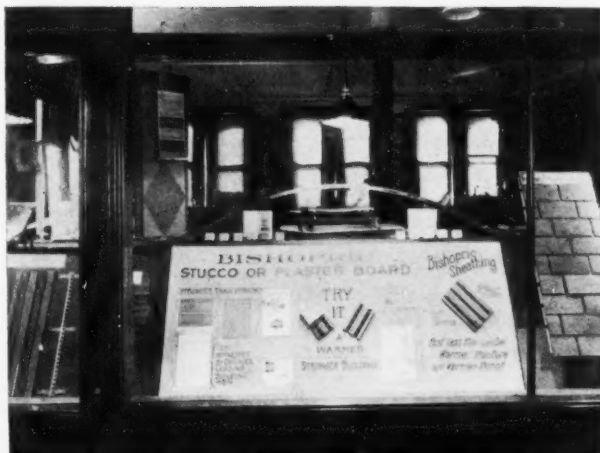
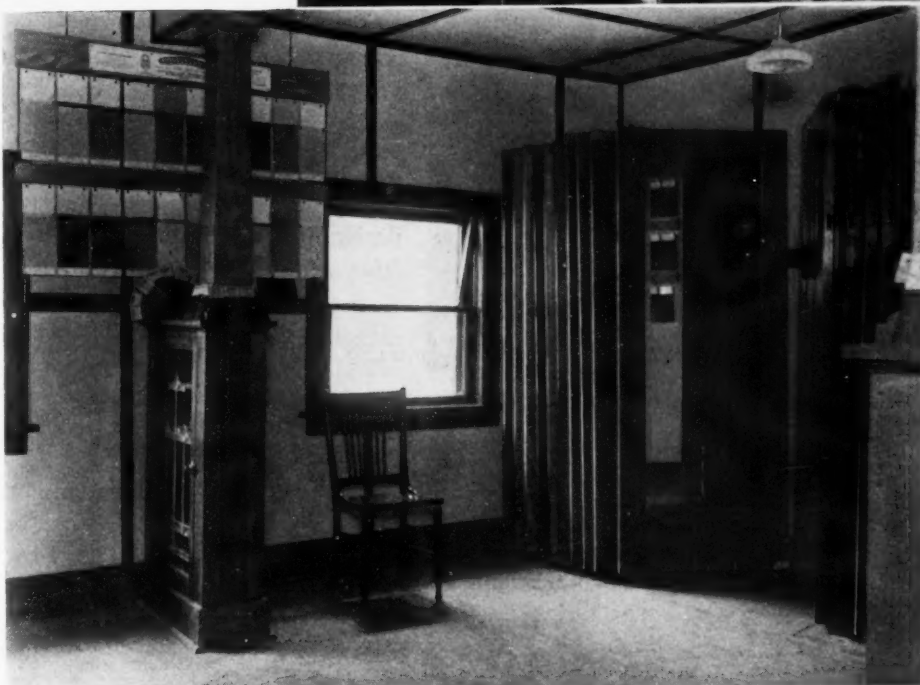


Window Display of Yellow Pine Rough and Finished Lumber, Rustic Siding, Ceiling and Trim in the Natural Color and Finished in Various Ways to Show Its Adaptability to Architectural Treatment. This Display Is Extremely Simple, But It Is Forceful Because There Is No Confusion and That Quality of the Wood Which the Majority of People Are Interested in—Figure—Is Very Clearly Shown. The Lighting Arrangement Is Largely Responsible for the Success of the Display. The Strong, Non-Glaring Light From Above Throws the Specimens Out Strongly Against the White Background.

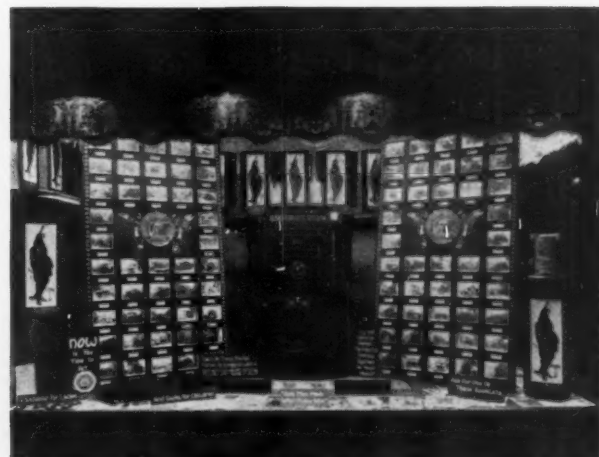
Display Shelving in the Service Room of the R. L. Dunlap Lumber & Coal Company, Iowa City, Iowa. The Shelves Serve a Double Purpose in that the Stock of Smaller Articles Is Stored Here at the Same Time That These Goods Are Being Displayed. The Framework and Counter Are Used to Display Small Samples of More Bulky Materials.



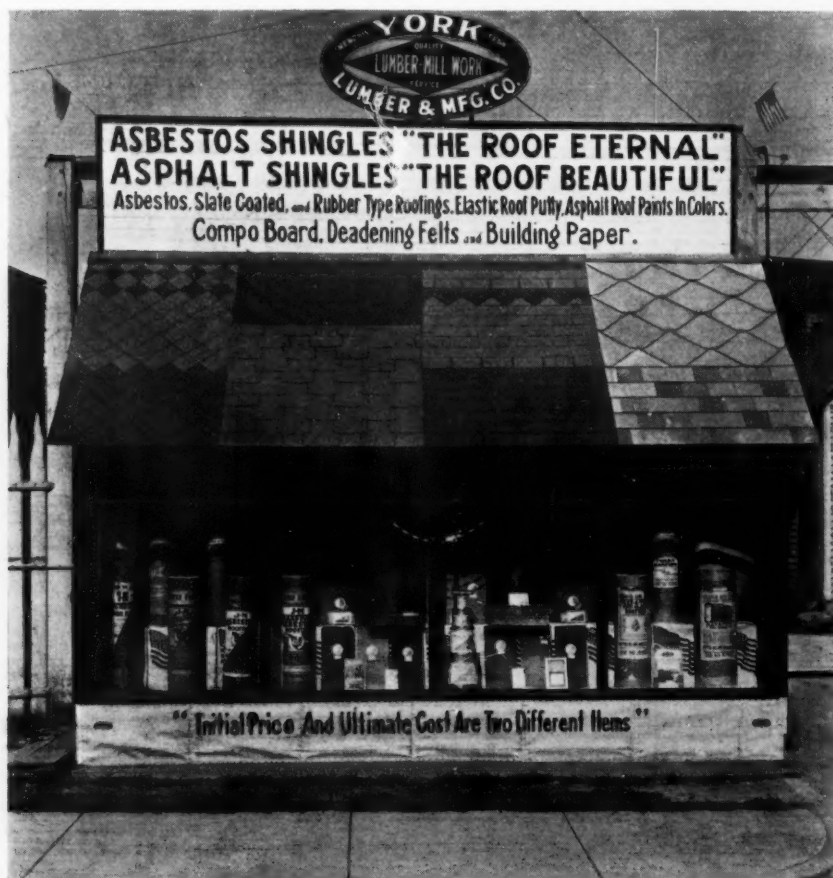
Corner of the Service Room of the R. L. Dunlap Lumber & Coal Company. The Walls and Ceiling Are Finished with Wall Board. A Set of Full Size Morgan Hardwood Doors, Finished with the Products of the Bridgeport Wood Finishing Company, Is Placed Where the Light Is Most Effective. A Full Set of Specimen Wood Panels Is Also Shown to Advantage.



Display Boards Used to Show Bishopric Stucco and Plaster Board and Other Materials in the Windows of the St. Paul Builders' Material Company, St. Paul, Minn. This Form of Window Display Is Capable of Giving Much Useful Information in Limited Space. The Attention Value of the Board Depends Upon the Selection and Arrangement of the Details, Color Scheme and Lighting Effects.



Window Display of the Beckwith "Molstair" Furnace by E. J. Hallett of Pontiac, Mich. Rug Under the Furnace Is Tan with a Crimson Border, Indian Design. Face and Heavy Castings of Furnace Are Flat Black and Fire Travel Is Bright Red. Background of Photographs Is Flat Crimson. Photos Are of Houses Successfully Heated with This Furnace. Set of Grates Is placed in Foreground.



"The Roof of Actual Service" Applied to the Display of Roofing Materials. The York Lumber & Manufacturing Company of Memphis, Tenn., Believes That the Public Is More Interested in the Service Which a Roofing Material Will Give Than It Is in Its Appearance Alone. The Display Shown Above, Which Is Built Near the Office of the Company, Presents Various Designs Which Are Attractive, While at the Same Time the Roofing Materials Are Exposed to the Elements. The Company Reports That the Sales Resulting From This "Silent Salesman" Are Most Gratifying.

is the finish of the walls and ceiling. In most cases the best finish is pure white. Display panels are

business is such that evening display is possible, the arrangements for lighting are important. Ordinarily

shown off to best advantage against a white background and the entire appearance of the room is improved by this finish.

The utilization of window space is the next method which the dealer may use to display his goods for the encouragement of building. A good window display is an invitation to the observer to come inside and learn more about the goods on display. The window display may be closely merged with the display room, if the window is in one of the walls of this room. Some part of the display room exhibit may then be placed at this window.

Simplicity is the keynote of a successful window display. A confusion of articles thrown together with no logical order cannot carry any force or attention value. The sort of window display which the dealer in building materials and equipment ordinarily uses, consists in a central object which catches the eye of the observer, around which additional objects are arranged to supply the details of the information which the display is intended to give. Striking colors may be used to attract attention.

When the location of the place of



Parade Float Recently Used by the Hawkeye Lumber Company of Centerville, Iowa. The House and Garage of the Miniature Farm Building Group Are Finished with Atlas White Portland Cement Stucco and Various Other Uses of Cement on the Farm Are Indicated. When the Observer's Attention Has Been Attracted by This Little Group of Buildings and the Large Figure of Atlas, He Is Certain to Read the Signs, Which Will Leave in His Mind the Thought That the Hawkeye Lumber Company Is Ready for Him on All Matters Pertaining to Atlas Cement.



Cupola Mounted on Section of Roof and Placed Outside Dealer's Office, as Recommended by the King Ventilating Company. This Makes a Very Attractive Display and It May be Used to Convert Disbelievers by Having Them Stand Inside the Ventilator Where the "Draft" Is Forcefully Demonstrated. The True Value of Such an Exhibit Is Obtained When the Dealer Finds It Possible to Get Out and Become Acquainted with Those Who Stop to Examine It.

a row of lights, fitted with reflectors, should be placed along the upper edge of the glass. These lights produce strong illumination of the display without glare.

An exhibit outside the office of certain materials and equipment has been found very effective. Dealers who have fitted out such an exhibit are accustomed to call it their "silent salesman." There is no better

method of demonstrating the qualities of a roofing material, for instance, than to place it under the con-



Float Used by the Meuser Lumber Company, Guttenberg, Iowa, to Promote the Sale of Ventilating Systems and Hog House Windows. This Small Building Is Mounted on a Wagon Gear. The Hog House Windows Are Displayed Strongly Against the Dark Background. One of the Larger Size "Milcor" Ventilators of the Milwaukee Corrugating Company Is Mounted on the Roof.



Display Stand Furnished Dealers by the Franklin Barn Equipment Company, Monticello, Iowa. When a Farmer Stops at This Stand, the Dealer Loses no Time in Getting on the Job and Explaining All of the Features of the Equipment. He Knows His Subject Thoroughly; His Experience Has Taught Him Just What to Say and When to Say It. The Experiences of a Large Number of Dealers Are Sufficient to Prove That This Is an Effective Sales Method.

ditions which it would be subjected to in actual service. Barn equipment exhibits outside the office have already firmly proved their effectiveness.

There is always a place for "something new" in the encouragement of building. A notice in the local paper of a special exhibit in the display room of the dealer will arouse interest in building. A clever parade float will be effective. Study the matter of displaying goods.

Plan an exhibit of some kind. Tell the manufacturers of the goods which you sell about your plan. Do your part to encourage building.

"Concentration will win where scatteration will lose, especially if concentration be hooked up with keeping everlastingly at it."

THE MAN FROM THE LUMBER YARD

If you are a DEALER we would like you to get this writer's view-point of your duty. If you are a BUILDER, to what extent will you co-operate?
—EDITOR.

IT was some time in September that the "big fellow" took me out to lunch. While we waited for our "beans," he said to me: "Woody, the biggest problem Uncle Sam is going to have as soon as he spansks the Kaiser, is developing man power."

He calls me "Woody," not after our esteemed President, nor because of the density of my head, but because I came from a lumber yard.

The House vs. The Automobile

He went on to say that the world was not going to need men so much in quantity as in *quality*. He drew attention to the fact that the right man plus a linotype machine was equal to five men; the right man plus a portable saw equaled four men; the right man plus a riveting machine, equaled six men.

In our discussion we touched on the wonderful development brought about by Luther Burbank in the vegetable kingdom. He had only praise for the spending of millions of money by the government in its work in the animal kingdom. You have, perhaps, forgotten the men and money the National Government gave to check the foot and mouth disease that was prevalent within the last twelve months in the central states.

You know that if your hog and your neighbor's hog developed a peculiar disease, a man from Washington would be on the job quickly.

What if your boy and your neighbor's boy developed the disease of joy-riding; there would be no government action unless the kids killed somebody. He gave it as his belief that HOME building would have to go ahead of AUTOMOBILE building for the best results in MAN building.

The more I observe, the more I think of HOME influences and the less of automobile influences.

Observation

I have been impressed with the fact that there are at least three new garages built to all other new business houses. I believe this average will hold good in practically every section of town or city.

Of course the thought comes to mind when I look at one of these buildings which generally has, in builders' hardware, three door locks, "there isn't much profit to a supply dealer in that building."

Then I also think of a remark made last March by a woman whose husband is in fair financial circumstances: "We have decided not to build this year, but we are going to buy a — machine and stay where we are another year. We will be out in the machine so much it will not matter much about the house."

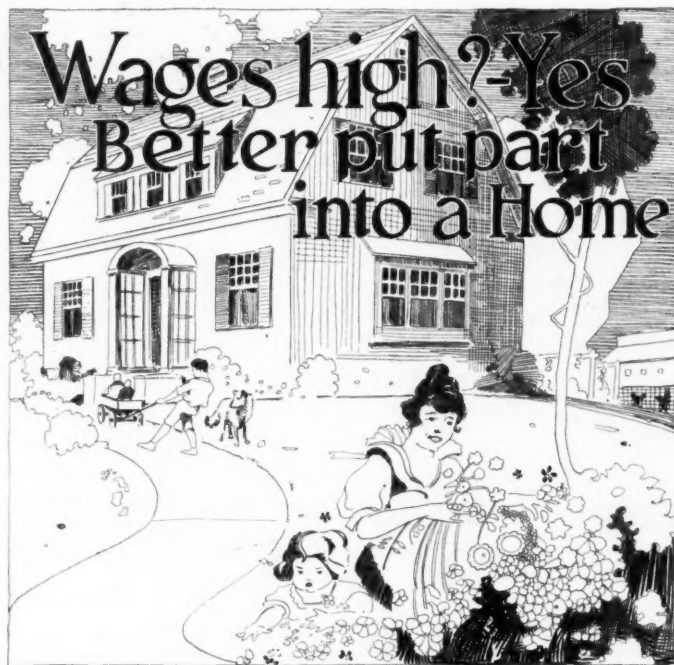
There is a seventeen-year-old boy and two younger girls in the family. I am not home much save Sundays and nights, but I know that the boy has had the machine out in the small hours of the morning when a chap of his age should be in getting ready to get up and go to work. One of the girls ran the machine into a telephone pole.

I asked the mother recently if they were going to build next year. "No, indeed, our machine has cost us so much I don't know when we can build," was the answer.

I would like to tell her that the big cost has not been in gasoline and repair bills, but in making idlers, drifters and dawdlers of her children.

Their rented house is not attractive. They are really ashamed of their so-called home, which is merely a place where they eat and sleep. The shame is that there are thousands just like it.

When I was a youngster there was a small stream near by and I had great fun building dams and changing the channel of the stream.



Rents Are Going Up and "Rainy Days" Are Coming. Protect Yourself from Both by Saving NOW for a Real Home.

It is astonishing how easily the flow of water, the style of dress, the trend of public opinion and whims of people can be changed.

I believe that it is time NOW for the dealer in building materials, with the aid of the builder and banker as well as the printer, the preacher and also the ladies of the Home Missionary Society, to begin to turn the tide toward HOME BUILDING.

I would say to the ladies of the H. M. S., make your homes so attractive that they will not turn out heathen to be converted later on. It is said somewhere in the good book: "Train up a child when he is young and he will not depart therefrom."

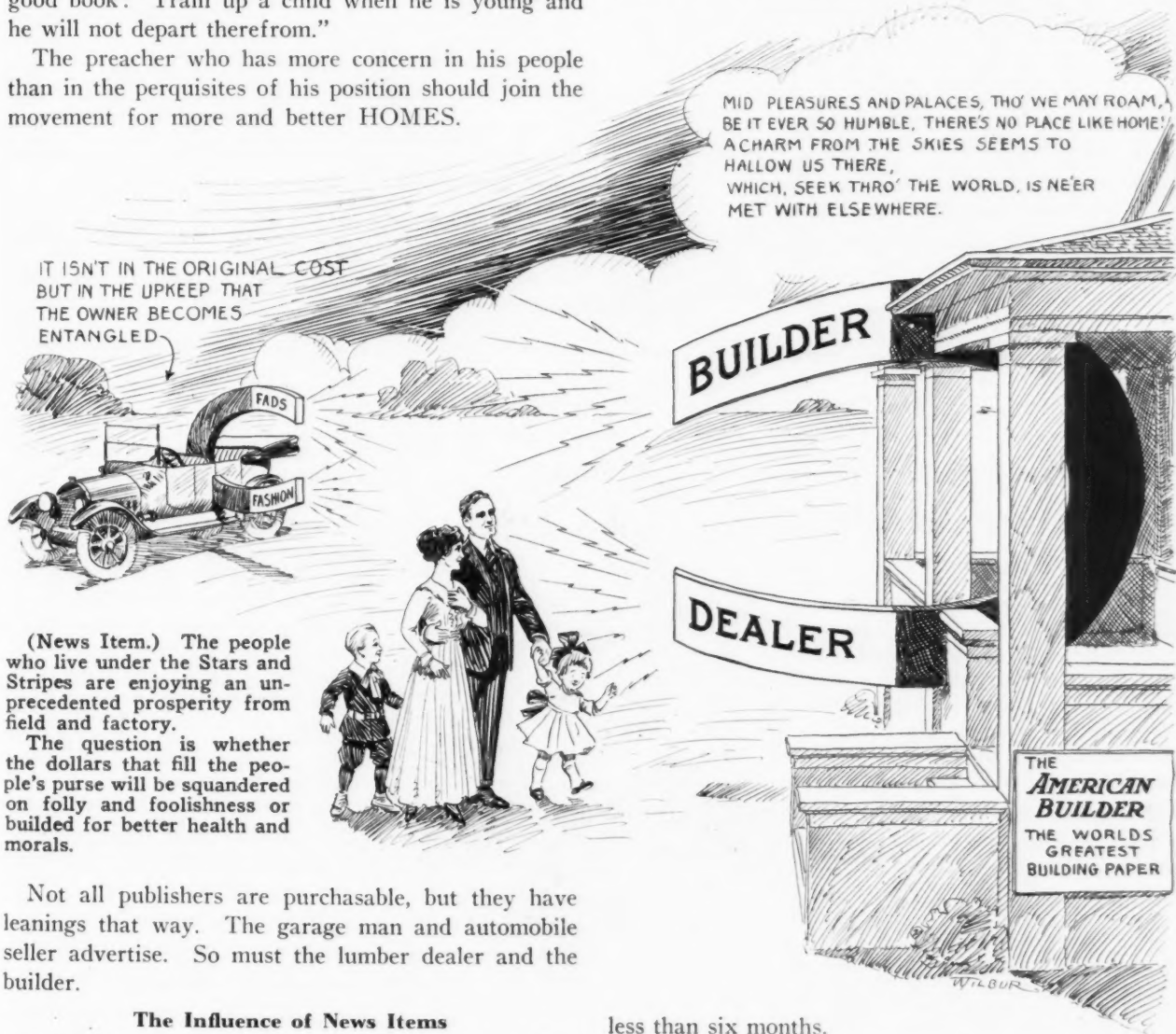
The preacher who has more concern in his people than in the perquisites of his position should join the movement for more and better HOMES.

people to his place, and then have such attractive books and pictures of homes suitable to his class of people, and such comforts and conveniences shown as would stimulate the desire for homes, its influence would soon be felt.

As I get around the country, I notice a great improvement in the displays of building material.

How much business would a milliner do if the hats and trimmings were not shown?

If the best druggist in your town made no more display than you do, his trade would drop off half in



(News Item.) The people who live under the Stars and Stripes are enjoying an unprecedented prosperity from field and factory.

The question is whether the dollars that fill the people's purse will be squandered on folly and foolishness or builded for better health and morals.

Not all publishers are purchasable, but they have leanings that way. The garage man and automobile seller advertise. So must the lumber dealer and the builder.

The Influence of News Items

It doesn't require money for all advertising. A few odd moments and a little thoughtfulness in supplying "news items" will have good results.

The alleged purpose of every newspaper is "standing for the welfare of the people and for boosting the town."

You must first make NEWS. You, Mr. Dealer, must originate the campaign.

Things don't just grow like Topsy, nor do they happen. You must concentrate on a plan and push it along.

If every dealer would employ some system to attract

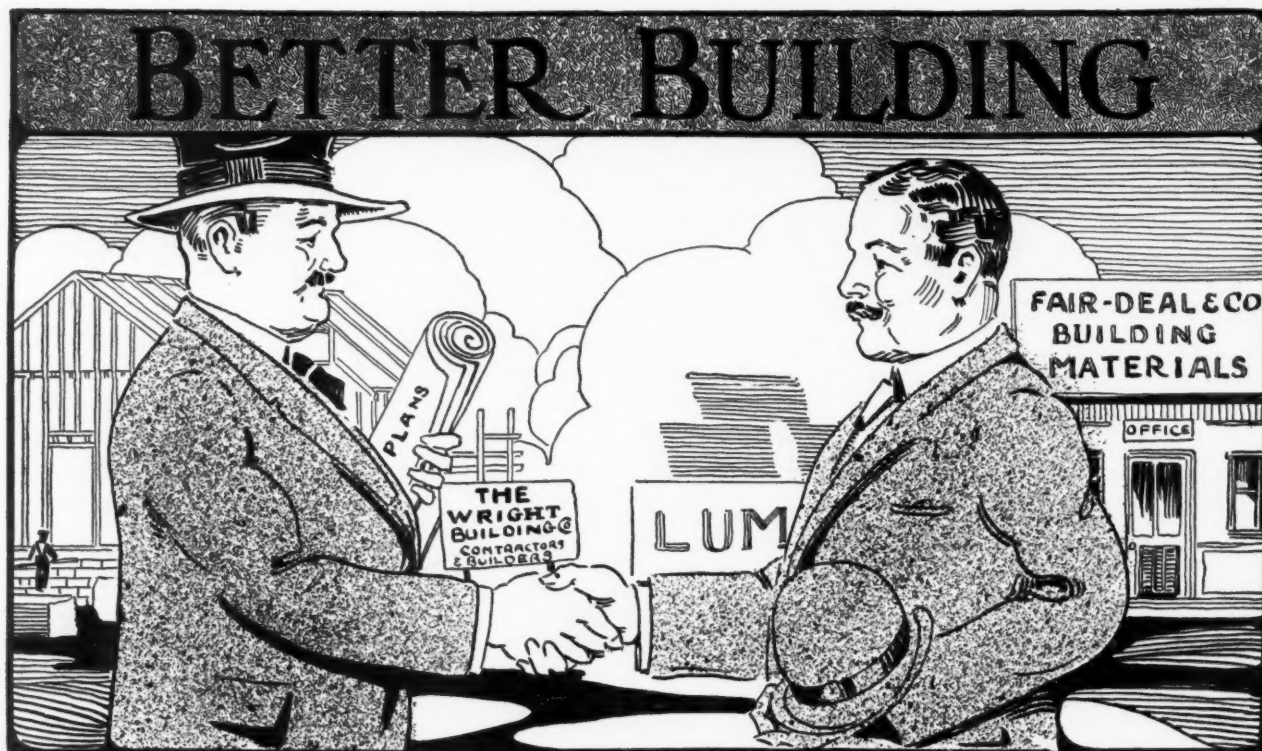
less than six months.

The builder should co-operate. The interests of the dealer and builders are so identical that they should pull together.

Every live builder would be interested in taking prospective, or possible home buyers into the display room of a dealer where the interest in a home would be increased and brought to a focus.

The people who live under the stars and stripes are enjoying an unprecedented prosperity from field and factory. The question is whether the dollars that fill

(Continued to page 142.)



Dealer-Contractor Good-Will Best for Building

Calling on the Lumber Trade

By Wm. Reuther

For thirteen years Mr. Reuther has been one of the Editors of the American Builder. He has always taken special interest in the dealer side of the building field, and has traveled thousands of miles in his efforts to persuade lumber dealers to distribute

IT has been my good fortune during the past twelve years to have called upon the retail lumber dealers from New York to Montana. I say "good fortune" because the ideas and knowledge I have gained have come largely from my association and talks with them.

Considering the number of men who are engaged in the retail lumber business, they are without doubt the most agreeable and broad minded class of men to call on in this country. I believe this is partly due to the fact that they deal in large quantities; they buy in carload lots and sell in figures running into the hundreds and thousands. This is bound to have its effect on the man; it is hard to have big ideas and broad minded views if you are selling prunes by the pound or sorting over strawberries to make up a good box.

There are a few exceptions still in business and my experience with them stands out like red letter



Bill Reuther, Editor and Salesman.

plan books and posters to promote the building business.

Mr. Reuther's many friends among the lumbermen will be interested to learn that he is now actively associated with the Radford & Wright Co., at Oshkosh, Wis. He is firm in the conviction that every building should have doors and windows—and he proposes now to furnish the same.

Look over his line when he calls.—
Editor.

days—or like a very sore thumb!

I remember one beautiful spring morning I got off the train in a small town in the middle west and called on the old lumber dealer in town. The owner had not arrived so I talked crops and general business with the office man, book-

keeper and yard man, all combined in one person.

At eight-thirty the owner came into the office, looked at me from the corner of his eye and without asking my name, business or previous condition of servitude, said: "I suppose you came in on that eight o'clock train."

I admitted it and he said, "Well, I guess we've entertained you long enough, good morning."

This happened a number of years ago and I am still thinking of new things I wanted to call him; but he disappeared into his private office.

I am willing to bet, however, that there are more

mail order catalogs in his community to the square foot than in any other section to the square mile, for a man who will treat a stranger that way is not very liable to get new ideas, new business or new money.

I told other salesmen about this incident and they told me what happened in that town. It seems this lumber dealer met one of his neighbors at the station one morning getting a shipment from a mail order house and criticized him for it.

The neighbor said, "John, I feel guilty about this.



"Well, I guess we have entertained you long enough; good morning."

I feel as if I had been caught kissing a neighbor's wife."

The following week he was buying from two mail order houses.

I am glad to say, however, that the big majority of the dealers today realize that the salesmen who call on them are serious minded men who are specialists in their particular line. Competition has become too strong to allow the manufacturers to risk sending out a low grade man. The large majority of the salesmen who call on retailers have made a thoro study of the line they represent. If it is lumber, they have worked in the woods and in the mill before they were sent out. If it is sash, doors and millwork, they have worked in factory and warehouse and know from actual experience how and of what everything is made.

As a result, the man who comes to you selling roofing,



The man came in to pay a bill—and the dealer kept on reading.

cement, or advertising, has information at his command that you can have. It is information you can use in your business from day to day and the only cost to you is a little consideration.

One of the common failings in a great many retail lumber offices is the lack of prompt attention given to customers. I have seen them come in and stand on one foot and then the other like a stranger in church. It isn't necessary to go as far as the bow-legged clerk in a dry goods store, who went up to a lady and asked her what she wanted, and after being told, said, "Walk this way." Maybe she did, but she wouldn't own up to it, and left the store.

But my point is that if you are busy, let him know that you see him and ask him to look over some plan books or buying magazines until you are thru.

Would it not be a good idea in this matter to have a table in your front office with a copy of the AMERICAN BUILDER on it, and some plan books? I believe that table would pay for itself the first day.

I don't want you to feel that I only want to criticize; but you know your good points better than I do, and I have never gotten anything but a bigger hat by being told how good I was.

If I don't add the car number into the next invoice or fall over a bundling charge, I may write an article on "Retail Lumber Advertising I Have Met."



"And he said, 'John, I feel guilty about this.'"

Oak Flooring and the Retail Dealer

WHOSE FAULT WAS IT THAT THE FLOOR HAD TO BE RELAID?

By W. L. Claffey




HERE has been a great deal written about the care and handling of oak flooring after it leaves the retail lumber yards, but very little has been said to educate the retail lumber dealer in the proper handling and storing. In a great many yards oak flooring is handled very much like dressed lumber, stored in sheds that are open at both ends, and exposing the oak flooring to such an extent that it absorbs moisture. When oak flooring absorbs moisture it will cause it to swell anywhere from 1/32 to 1/16 inch. When the floor layers receive flooring in this condition it readily can be seen what an imperfect floor it will make. The floor layer and the lumber dealer are always prone to place the blame on the oak flooring manufacturer, in cases arising from the improper care and handling from the retail yards to the job. They seem to overlook the fact that all hardwood flooring will absorb moisture very much like a sponge, and oak flooring is no exception.

A short time ago the writer was in Cleveland during a very rainy day. He went to a small retail lumber yard and found oak flooring being subjected to a very hard, dashing rain. The only protection it had from the elements was an ordinary temporary pine roof. When the dealer was informed that such housing would bring on trouble when laid, he replied that the stock was sold and would be delivered in a few days, and it would then be up to his customer. This

particular dealer, we found out later, did not enjoy a very large trade in hardwood flooring and undeniably the care and housing conditions at his yard were the cause of it. On the same day the writer went to a large apartment house at Cedar Hill, an exclusive residence section of Cleveland, and found the floor layers laying oak flooring in the midst of a very heavy rain storm with the rain blowing in from two sides of the building. Several floors had been finished and pools of water covered the entire oak floors. When the owner and the contractor were asked why they did not put the windows in, or some temporary boards to keep out the rain, they replied that the sash for the windows had not arrived, and that they were too busy to bother with any temporary make-shift for closing the windows. They were also under the impression that a dashing rain would not injure the floors. The owner afterward told me that he intended to sell the building, and that if the floors gave subsequent trouble that he would have no further interest in the matter. I informed him that all the floors that were being rained upon would in a short time, after being dried, buckle up to such an extent that it would be necessary to replace the entire floors.

Some of the large retail lumber dealers have excellent housing conditions for oak flooring. They are usually steam heated and located in a corner of their main shed, properly ventilated, lighted and having ample doors toward the roadway. Proper housing of

(Continued to page 134.)




THE BUILDING MATERIAL DEALER

AT the steering wheel of the building industry in every community sits the lumberman, or as he is more properly called the Building Material Dealer. He ranks with the banker as a man of affairs. Along with his materials he dispenses sound building advice and often furnishes blue prints. He is always ready and willing to figure an estimate and knows how to encourage building by arranging necessary credit. His office is headquarters for designs, plans and building information generally. Pulling together with the building contractor he makes a great team for business.

MORE WINTER WORK



Practical suggestions
for
keeping the 
coming in during
the Winter Months

Wooden Shingles and "Winter Dollars"

HOW THE ONE FETCHES THE OTHER FOR THE BUILDER WHO IS KEEN FOR BUSINESS

By J. S. Williams

Sec'y Shingle Branch, West Coast Lumbermen's Ass'n.

THE time-worn idea that building should cease when the first frost comes, and not start again until the April sunshine appears, is one that merits careful thought and study on the part of the whole building industry to dispel and correct.

It is true that conditions are not nearly so propitious for building in December and January as they are in June, but that is no reason at all why the December and January building should not be done.

One of the most widely used building materials is the wooden shingle, and for all-the-year building, is admirably adapted. It is not a material that will crack in cold weather; no heating of liquid is necessary to apply it to its resting place. It is not a material that a worker must have bare hands to apply, giving the shingler an opportunity to wear gloves and be warm and comfortable while working. This means much more efficient and faster work.

And neither rain or snow unfit shingles for laying. In fact the best practice is to lay shingles that have previously been thoroly wet, because they are then in a condition of maximum expansion, and buckling will never occur.

The carpenter or contractor who finds work scarce in the winter season, will do well to cast about his town and see if there are not a number of roofs that need repairing, or re-roofing. A careful survey will disclose many such opportunities, that can very nicely be turned into account.

Another excellent source of winter business is exterior remodeling with wooden shingles. The town

is an exception which does not have many homes that a new "jacket" of wood shingles would beautify. Many homes that are awkward in appearance can be turned into "one of the nicest homes in town" with new shingle siding. Where the old siding is still in good condition the shingles can be laid directly over it at a minimum of cost; or if the old siding is in a poor state of repair, can be torn off, and shingles put on over sheathing in a most simple manner.

The wooden shingle has gained immensely in popularity since the advent of the bungalow; altho its use by no means confined to the bungalow, but because the bungalow demands a siding that is novel, neat and beautiful. There are several reasons for the popularity of shingles as a siding material. First, it is simple to put on; has a low

initial cost and a low upkeep. Painting is not necessary to the life of a shingle siding, many preferring the natural rustic effect, that softens with age to a rich dark brown. But if color and "life" are preferred, these can easily be had thru the use of creosote stains, in almost any desired color. Moreover, the staining of shingles need not take place nearly so often as the painting of other forms of painted home exteriors.

One doing such work should be very careful to use rust-proof nails (solid copper, pure iron, or zinc-coated nails), or otherwise the life of the nails will be much less than the material that they hold in place. For siding purposes, the thinner shingles are equally as desirable as the thicker shingles, and are cheaper, because on the side of a home, mechanical wear is almost

(Continued to page 134.)



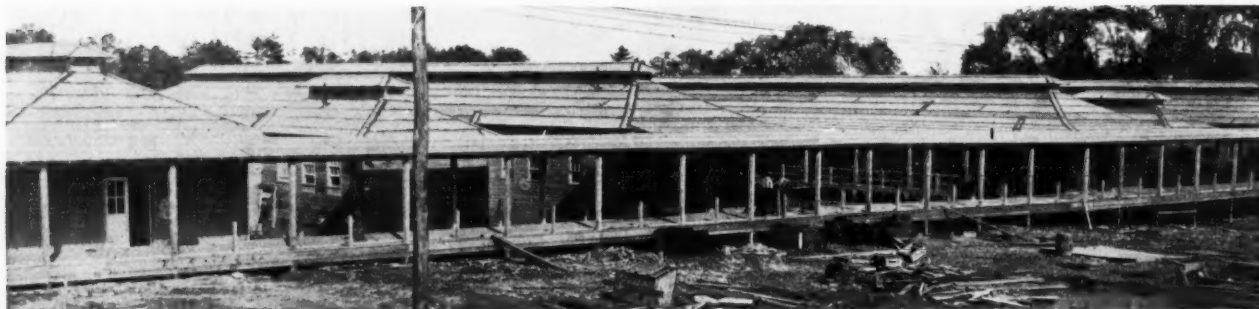
The Shingle Sided Cottage Has a Special Grace and Harmony with Its Surroundings.

How Camp Devens Was Built at Ayer

DETAILS OF THE ORGANIZATION AND OF THE HUMAN SIDE OF THIS HUGE CONTRACT: THE METHODS OF SORTING, STORING, MAKING UP, AND DELIVERING MATERIAL TO THE PROPER BUILDING OR SITE; THE EQUIPMENT AND ARRANGEMENTS FOR PREPARING AND CO-ORDINATING THE PLUMBING, CEMENT WORK, LUMBER, ETC.

By Peter F. O'Shea

In 3 Parts—Part 2



Completed Section Hospital Unit at Camp Devens. Groups of Hospitals Have Connecting Roofed Walks—All on Same Level, Besides Verandas All Around the Outside.

HAVING accounted for the highly important foundation work of hiring many thousand men, purchasing the material and getting it on the ground in time, and arranging for the housing and feeding of the large force of employes, we now come to the actual construction methods which enabled the contractors to accomplish such a gigantic contract in so short a time as ten weeks.

The manufacturers of houses begins right in the railroad switch yard. When a car or a train of dimension lumber stock pulls in, it is shifted by the contractor's job locomotive to the track running along the part of the lumber yard which is devoted to dimension lumber. Beside this track there is a road for trucks, which sometimes back right up to the car and take stock directly from it to the house being built. But this is only in case of special stock specially needed. Ordinarily, gangs of laborers under foremen unload the stock, sorting it as they carry it to the correct piles. "Correct" has a peculiar meaning.

Beside the track, and about fifty feet away from it, is a line of fourteen sawmills and planers. Each mill is run by electricity, wired to it by the contractor's electrical department from a high tension line and transformer, built within a week from the starting of work at the camp. At first each mill also had a gasoline engine attached and ready to work in case the electric power failed, so that there would be no stoppage of work. Later, when the permanent power line of much higher tension was tapped from several miles away and run into the camp for permanent lighting of the cantonment barracks, and so forth, the presence of the two kinds of electric power was considered a sufficient safeguard, and all but four of the gasoline engines were removed to other points in the construction work, like pioneers going West.

Each saw and planer with its table was set up to handle a certain size of work, so that there would be no lost time or confusion from changing. Using a large number of men partly of an unskilled char-

acter, it is necessary to form habits and stick to them, and also to make the habits as easy and usual as possible, in order to get fast results, which mean orderly results. The saws were simple circular and ribbon saws, and the planers were only buzz planers, but they did the work.

The unloading gang piled the stock from the cars behind the particular sawmill which worked that size of stock. For instance, one mill would have behind it nothing but two by fours, another two by sixes, and so on. At first all the two by four mills were in a group at one end, then a group of two by six mills, and so on up the planers, which were at the further end of the row. But it was found that when a car came in from a small shipper or even a large one, many kinds of stock shipped together in the same car would necessitate too much walking by the unloaders, including frequent walks the lengths of the mill row. Also, a truck coming after the finished stock for one house also would have to travel the length of the row to pick it all up. Therefore it was found much better to rearrange the grouping of the mills, and break them up into little teams or units, each having within its limits a complete variety of work. Next to a two by four mill was put a two by six, then a two by eight, then a planer, and repeat all the way up the line. Under this arrangement, wherever a car stopped it was near a compact unit of saws which would use up its whole variety. The unloading gang never had to walk very far, and unloading was very much quicker.

Also, this method made it possible to stack the finished product for one building in a compact space, where the truck had nothing to do but back up and go off with it after the shorter period it took the laborers to load it on. The material for each building was stacked separately, and when finished was removed as soon as possible to make room for the next. When moved at all, it went directly to its proper site. Indeed, what went off up the road in a truck was not

spoken of as material or lumber, it was "a building."

The cutting of the proper material for a given building and its despatch to the proper site is secured in the following manner: Every building on the plan of the cantonment as laid out to fit Ayer by the landscape architect of the engineer's force is given a number, roughly, according to its location. For instance, numbers 1 to 76 constitute the first regiment of heavy artillery, the nearest regiment to the railroad. For building purposes, each regiment is called a "unit," and the units are isolated from one another by a distance so large that if an epidemic of disease should unfortunately and in spite of all the efforts of the medical corps start in one unit it would not spread to the next. Therefore, building 77, which is in the Light Artillery, is not by any means adjacent to building 76.

These seventy-six buildings include among them all the varieties of structure needed for a regiment. But a certain number of these will be barracks of the same size and shape, a certain number lavatories, a certain other number also lavatories, but of a slightly different floor plan, and so forth. This is also true for the other regiments. Therefore, the buildings are standardized according to uses and plan, and each type lettered alphabetically, as "Type W," or "Type AA" or "AE." For two or three of these types the same set of plans may suffice, and this the foreman needs to know. And then also there are sheds and stables which are built of a standard width, but of varying lengths.

Therefore, to give the necessary general information about a given building a "Building List" is used. It gives the building numbers, and opposite each number the unit in which that building is, the kind of building or purpose, the over-all dimensions, the type letters, and the plan number by which that type is constructed. Each head of department, superintendent, foreman and engineer has one of these. They are mimeographed on legal size paper, a complete list comprising a score of sheets fastened together. A section



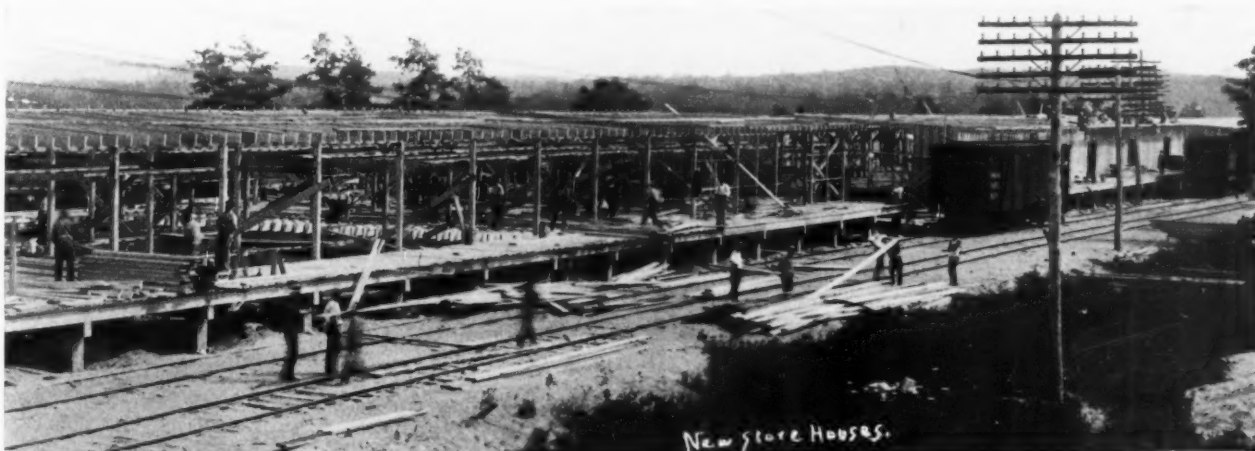
Space Under Buildings Is Filled In if Too Large. If Not, Scarcity and Cost of Labor Were Partly Solved by Leaving Work to be Completed by the Soldiers. Photo Shows Draft Boys Building Wall so That the Winter Winds Will Not Blow Too Cold.

of the list taken at random is as follows:

Bldg. No.	Unit	Building	Size	Type	Drawing No.
1311	Heavy Artillery	Administration Bldg.	20x 84	AL	28
1312	Heavy Artillery	Medical Department	20x119	BD	43
1313	Heavy Artillery	Guard House	20x 49	BV	29
1314	Heavy Artillery	Men's Barracks	43x140	W	11
1315	Heavy Artillery	Men's Barracks	43x140	W	11
1316	Heavy Artillery	Lavatory	21x 56	AK	25

Now each foreman of the construction has the necessary outfit of plans to proceed with a given building number. But the sawmill superintendent thought he ought to have a much more succinct thing to work from than a plan, because he was not primarily interested in the exact position each of his sticks would assume after he had them cut. All he wanted to know was how many pieces of a given length of a given dimension he had to cut for each house. He could work much faster and with fewer inevitable mistakes if he did not have to stop to take an abstract of each plan.

So the engineer's department went over the estimator's list of material needed for each building, which had been made out in the first place for the purchasing department, and took off a cutting list for



The Railroad Tracks Which Are to Serve the Finished Store Houses for the Government Have Been Finished by the Ley Railroad Construction Department in Time for the Building Construction Department to Use Them for Bringing in Material Right on the Job.

each type, composed of all the lumber which would be needed for that type, in its proper dimensions and proper length. These lists were glued on sheets of cardboard and kept on file by the superintendent of unloading and by the superintendent of the saw mills. A special rack was built for them by each man so that he could reach instantly for the one he wanted. As the cutting list for each type of building occupied somewhat less than a single typewritten page, this was a very compact form. One of the cutting lists is as follows:

Item	Type FX Size: 20'x133'		Barracks B Remount Station		Mark	Taken off by A Checked by B Quant. Remarks
	Size	Finish	Pcs.	Length		
Sills	2x6	Rough	36	14' 0"	2	
Sills	2x6	Rough	4	7' 0"	2	
Girders	2x6	Rough	18	14' 0"	3	
Girders	2x6	Rough	2	7' 0"	3	
Joists	2x6	Rough	140	10' 0"	7	
Bridging	1x3	Rough		Random	9	600 linear feet
Ridge	1x6	Rough		Random	10	140 linear feet
Rafters	2x4	Rough	162	13' 11"	11	
Roof Ties	1x6	Rough	19	16' 0"	13	
Knee Braces	2x4	Rough	20		14	
Studs Vert.	2x4	Rough	70	6' 11"	17	
Studs Vert.	2x4	Rough	68	2' 11"	17	
Ext. Door Sill	2x6	D 4S	10	2' 8"	28	
Under Floor, Etc.	7-8	sq. edge		Random		3059 sq. ft.

When, at the conference which the construction superintendent held with his foreman in his office

being done. When the complete building was cut, he took the memorandum off the board, marked the date of completion on the side, and filed it away, so as to have a record of it in case the truckers or the construction foreman came to the yard looking for it just after some other truck had departed for the site with it. They might accuse the mill superintendent of being mistaken, or stalling them off like the drug store clerk who says, "Willie, here's Mrs. Hightone. You crawl behind the counter. Yes, Mrs. Hightone, the boy left for your house with the package ten minutes ago. It's strange that you didn't meet him on the way down." Men who are very much in earnest about their work are apt to charge even that the superintendent cut the building only in his dreams; whereas the truth possibly was that some other foreman "stole" the building and put it up in place of one of the same type within his own construction territory, to keep his men busy.

On that particular day, Aug. 28, thirteen of these orders for buildings were issued, and by the morning of the 30th all of the thirteen memos. had found their way into the finished file.



Bollers Have Been Erected in Open Complete, and Afterwards Have a Building Built Around Them. One Such Heating Plant Central for Each Unit or Regiment.

every afternoon between 5 and 6 o'clock, the further laying out of the work required preparing the lumber for certain prospective buildings which as yet existed only on the plan or as batter boards, the superintendent's office assistant would forthwith write an order to the superintendent of the saw mill as follows:

Aug. 28.

"Turner:

"Make one bldg, Type AD, mark no. 1116,
3rd Brigade headqrs. GONS."

It saved bookkeeping at the mills, and saved confusion all round, for the superintendent's office assistant to write a separate order for each building, each on a separate memorandum sheet. This memorandum sheet was then used by the mill superintendent, by putting it up into a clamp board, on the wall, not only as an order, but as a file of his work in process of

As soon as he received one of these orders, the superintendent of the saw mills would note the type, reach for the Cutting List of that type, and divide the work among the different mills, according to size, taking off the complete list of each size on a separate sheet. For instance, one of the tickets taken from the partial cutting list shown above would be devoted to 2-by-4's and would read:

Prices	Size	Cut		
162	2 by 4	13 ft. 11 in.	Mark 11AA	Bldg.
70	2 by 4	6 ft. 11 in.	Mark 17AA	No.
68	2 by 4	2 ft. 11 in.	Mark 17AA	1116
Etc.				

For a Type AA building, for example, there would be on the 2-by-4 ticket, 31 different lengths with ten various marks, the whole totalling 868 pieces of 2-by-4.

(Continued to page 114.)

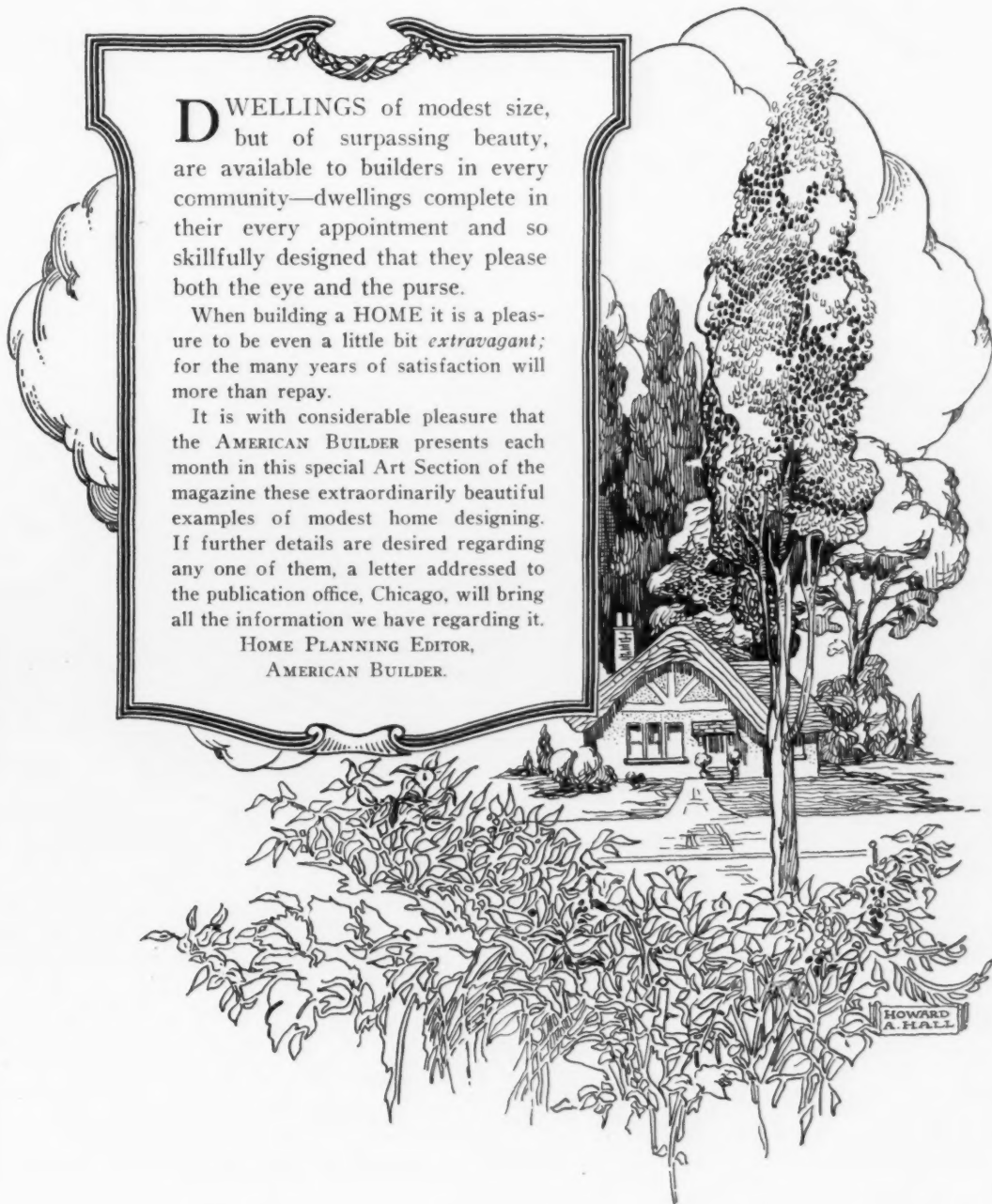
A PORTFOLIO *of* BEAUTIFUL HOMES

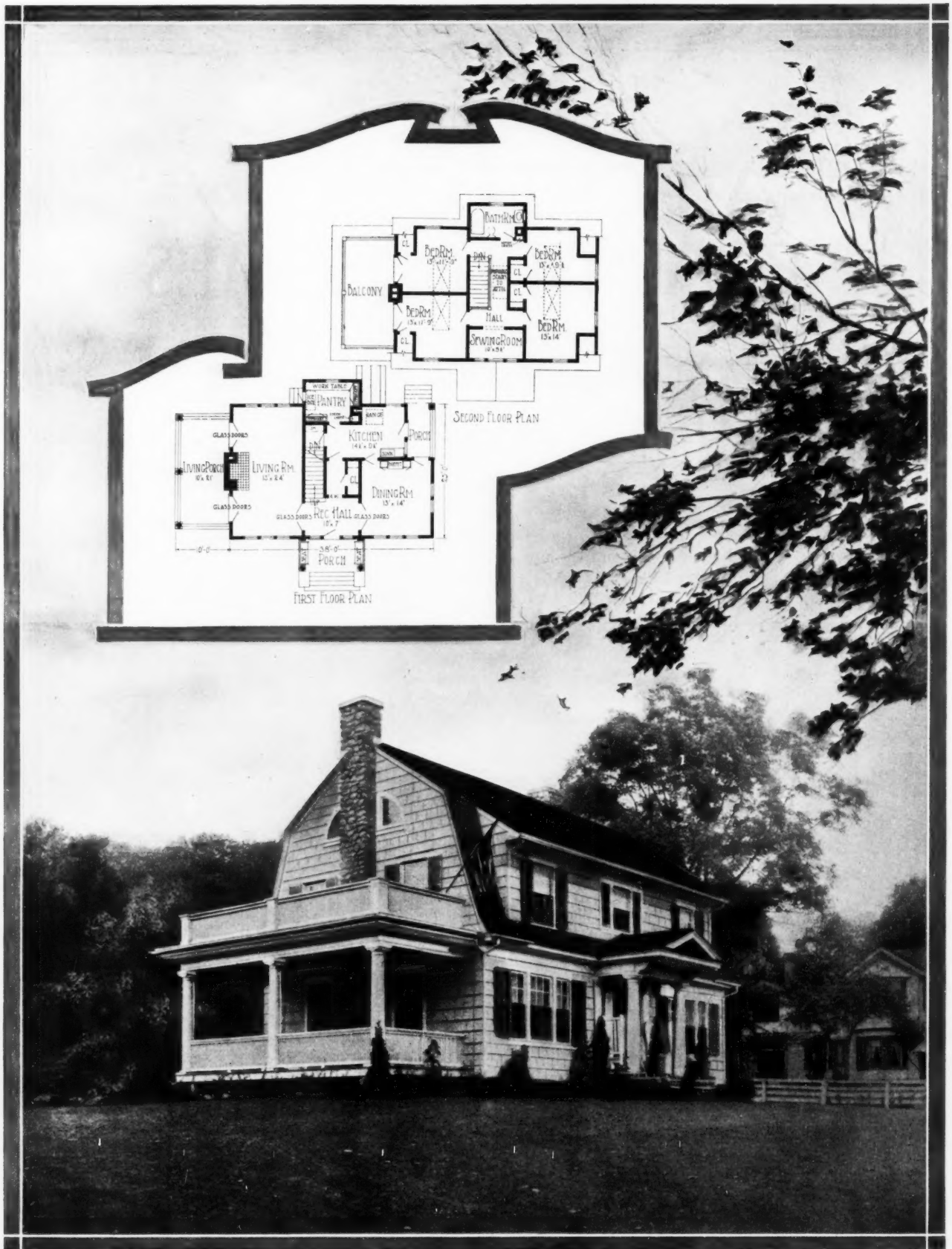
DWELLINGS of modest size, but of surpassing beauty, are available to builders in every community—dwellings complete in their every appointment and so skillfully designed that they please both the eye and the purse.

When building a HOME it is a pleasure to be even a little bit *extravagant*; for the many years of satisfaction will more than repay.

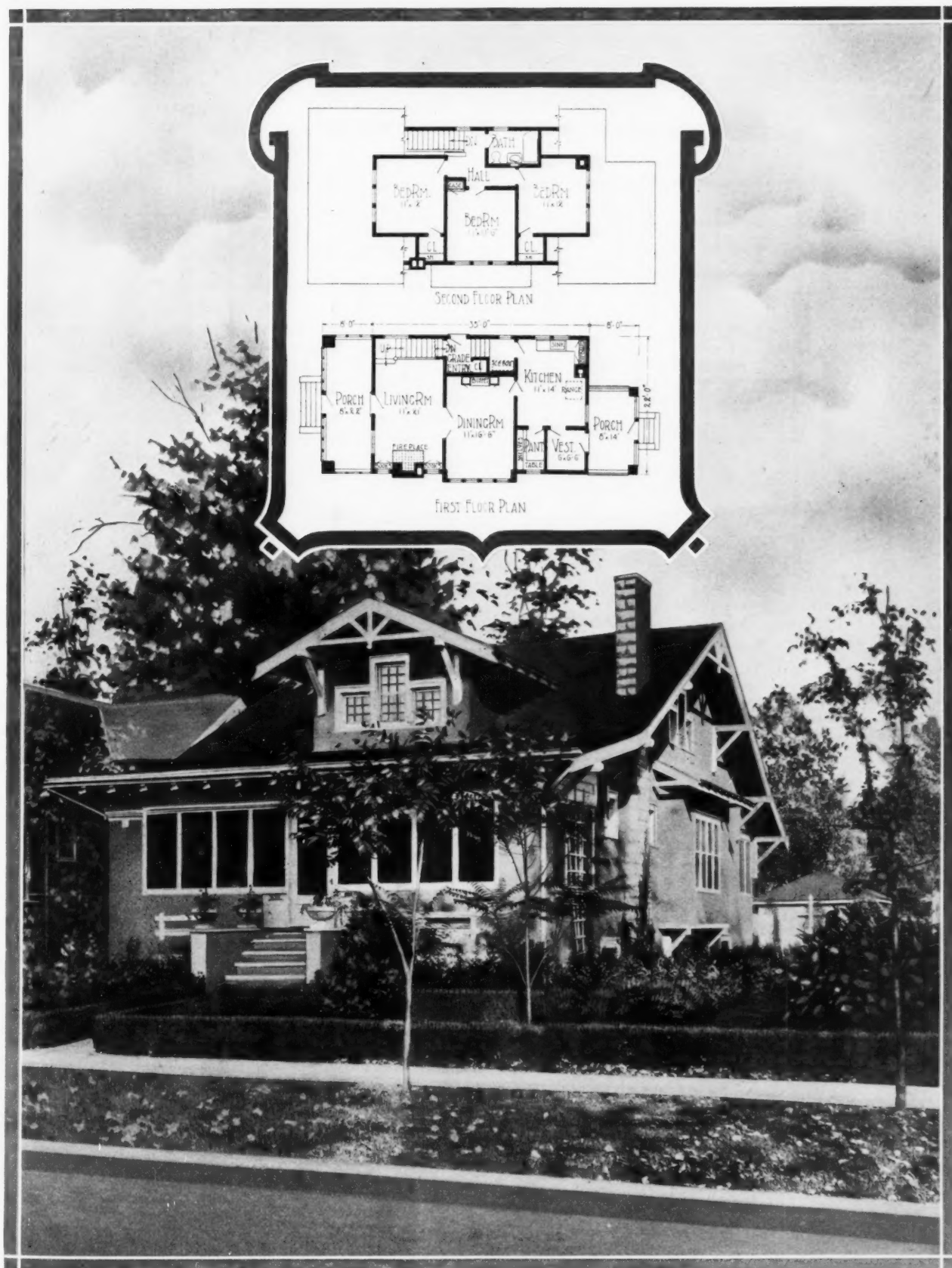
It is with considerable pleasure that the AMERICAN BUILDER presents each month in this special Art Section of the magazine these extraordinarily beautiful examples of modest home designing. If further details are desired regarding any one of them, a letter addressed to the publication office, Chicago, will bring all the information we have regarding it.

HOME PLANNING EDITOR,
AMERICAN BUILDER.

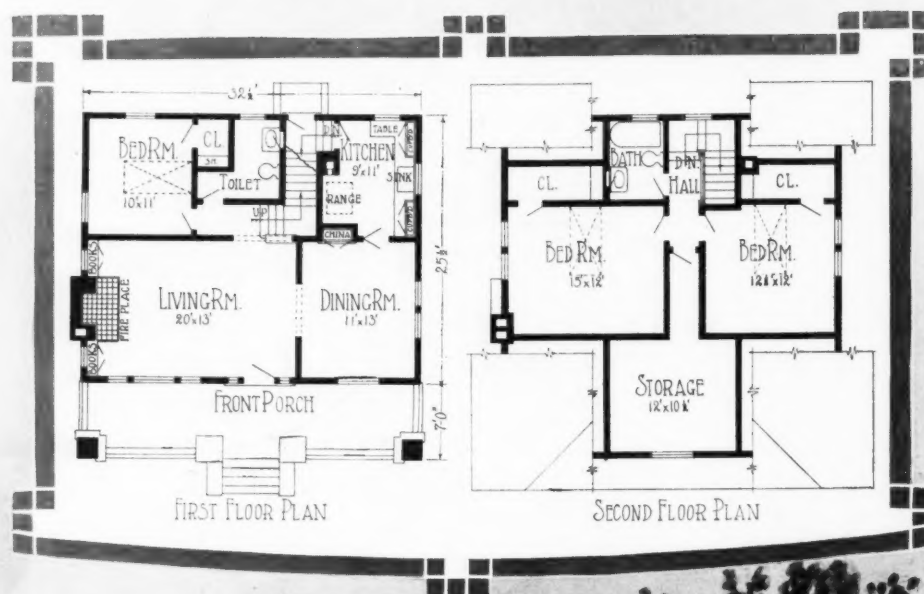




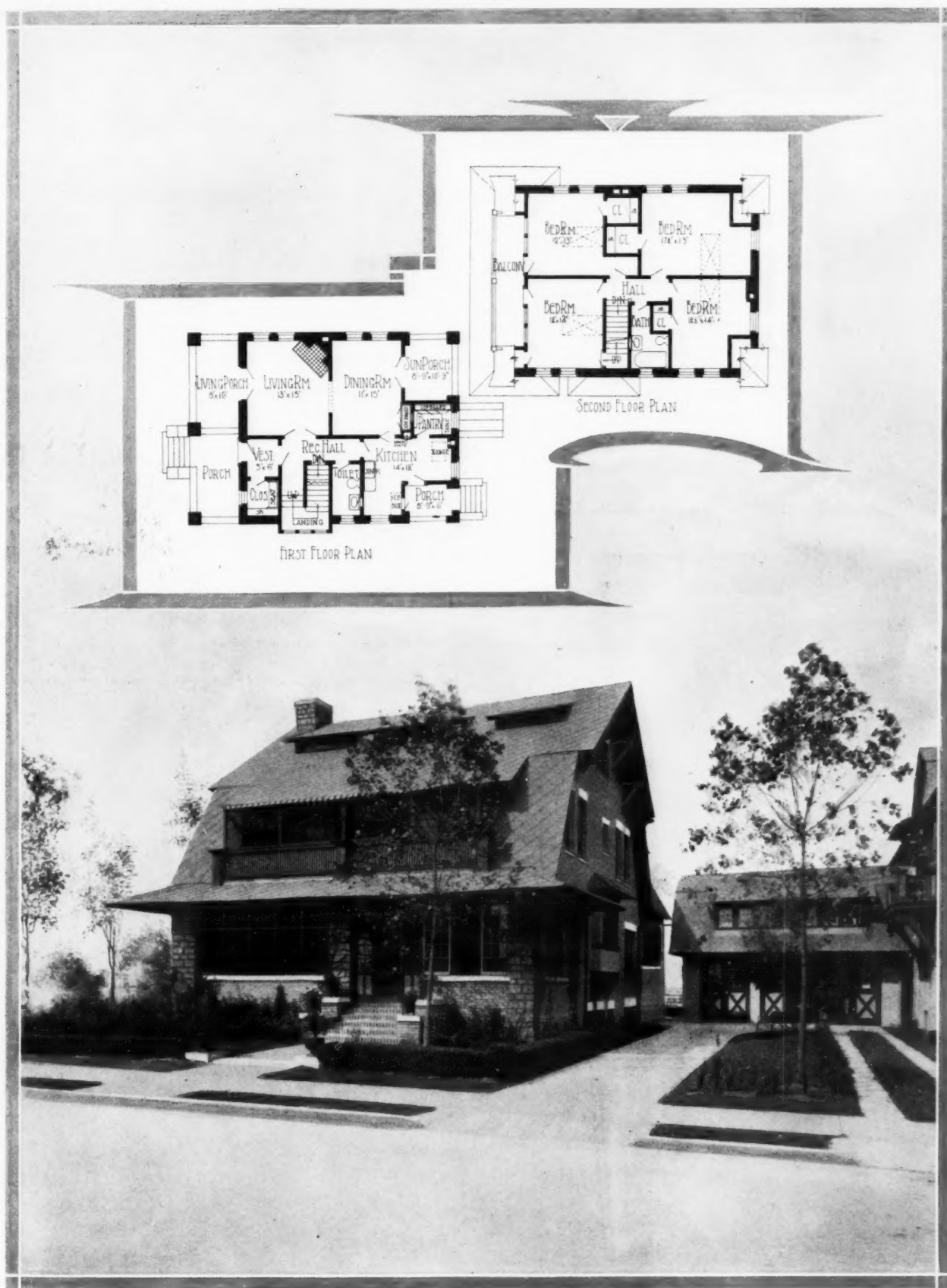
DUTCH COLONIAL HOUSE WITH SHINGLE FINISH. The walls of this attractive Colonial house, which is built at Union City, Conn., are finished with 24-inch shingles, stained white, the roof being covered with moss green shingles. Shutters are painted to harmonize with the color of the roof. Interesting features of the first floor plan are the large living room with adjoining porch and the pantry, which is fitted out in an elaborate manner. The second floor plan shows an excellence of arrangement which is characteristic of this style of house. The size is 38 feet by 25 feet. F. Alton Clark, Architect.



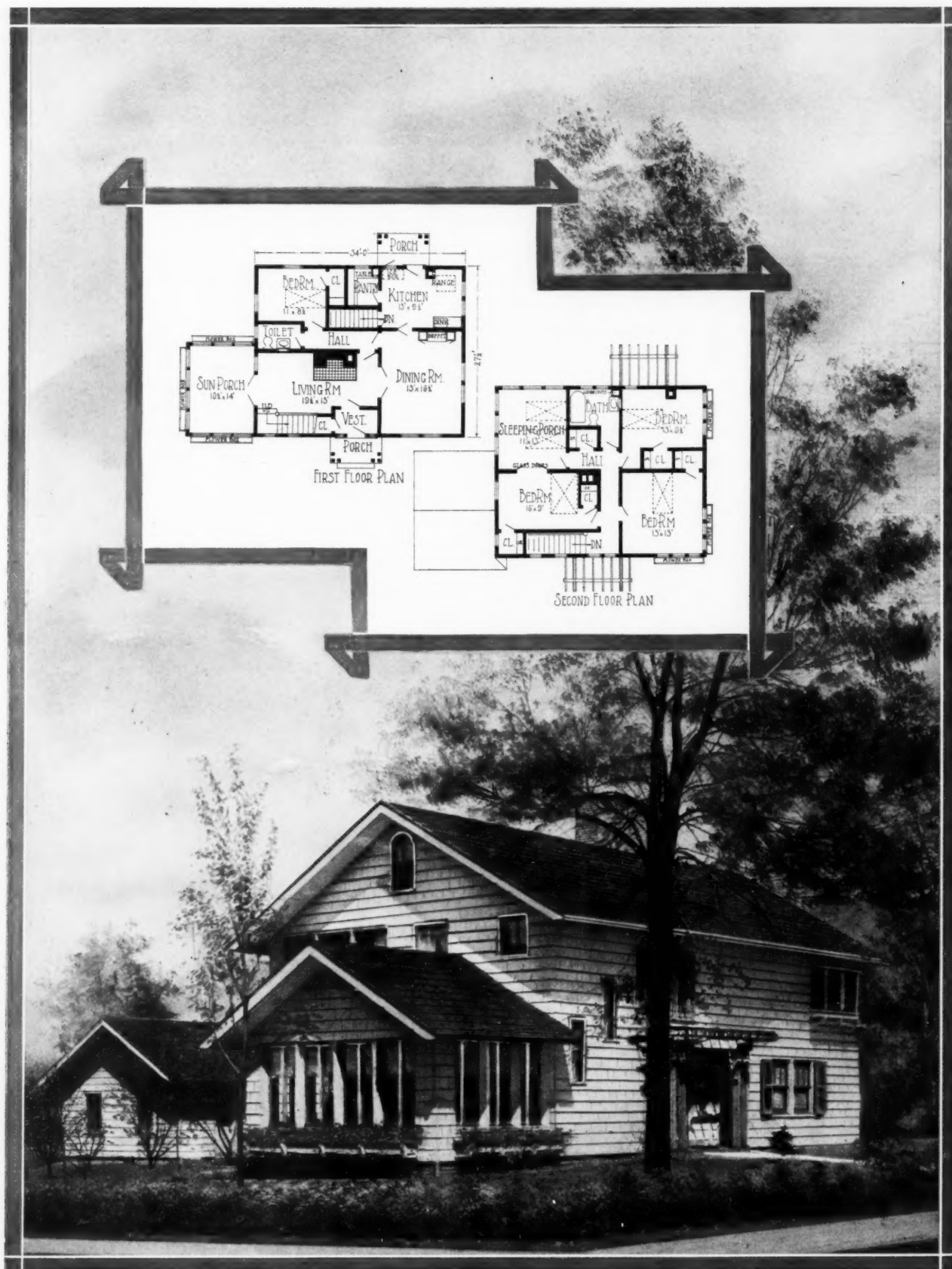
ATTRACTIVE STUCCO HOUSE OF SIX ROOMS. This house follows the story-and-a-half type which has become so popular during recent years. The exterior is finished with stucco in a gray tone with the wood trim painted white. Concrete blocks are used for the foundation walls and the chimney. Details of ornamentation are very effective and well balanced. First floor plan includes screened porch, living room, dining room, kitchen, pantry, rear porch and vestibule. Three bedrooms and bath on second floor. Size, 35 feet by 22 feet, not including porches.



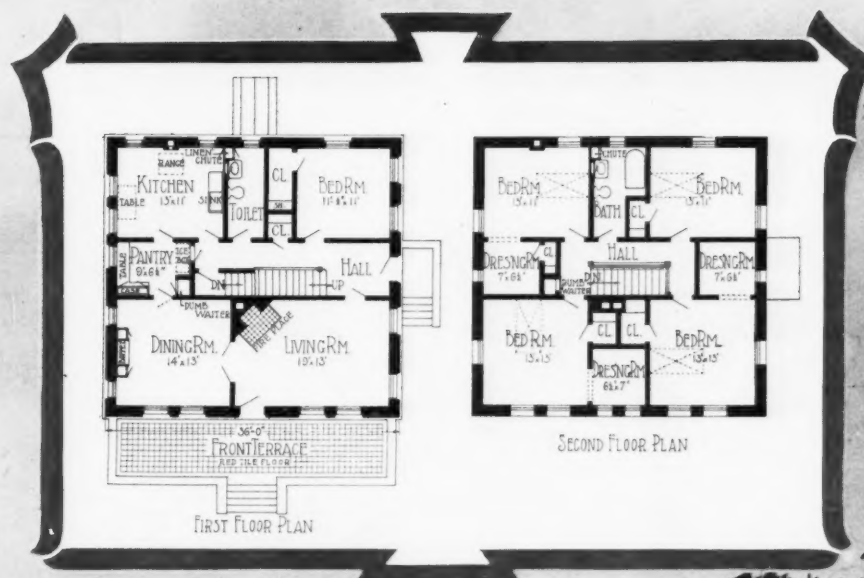
STUCCO HOUSE WITH NOVEL ROOF CONSTRUCTION. One of the noticeable features of the exterior of this house is the roof. It is designed to follow, in a very much modified form, the Japanese style of roof. At each gable end the ridge is given a slight upward curve and considerable overhang is used. The elaborate ornamentation of the Japanese style is eliminated. The first floor plan includes a living room, dining room, kitchen, bed room and toilet. There are two bed rooms, a storage room and the bath on the second floor. The house proper measures 32 feet 6 inches by 25 feet 6 inches on the ground and there is a porch 7 feet wide entirely across the front.



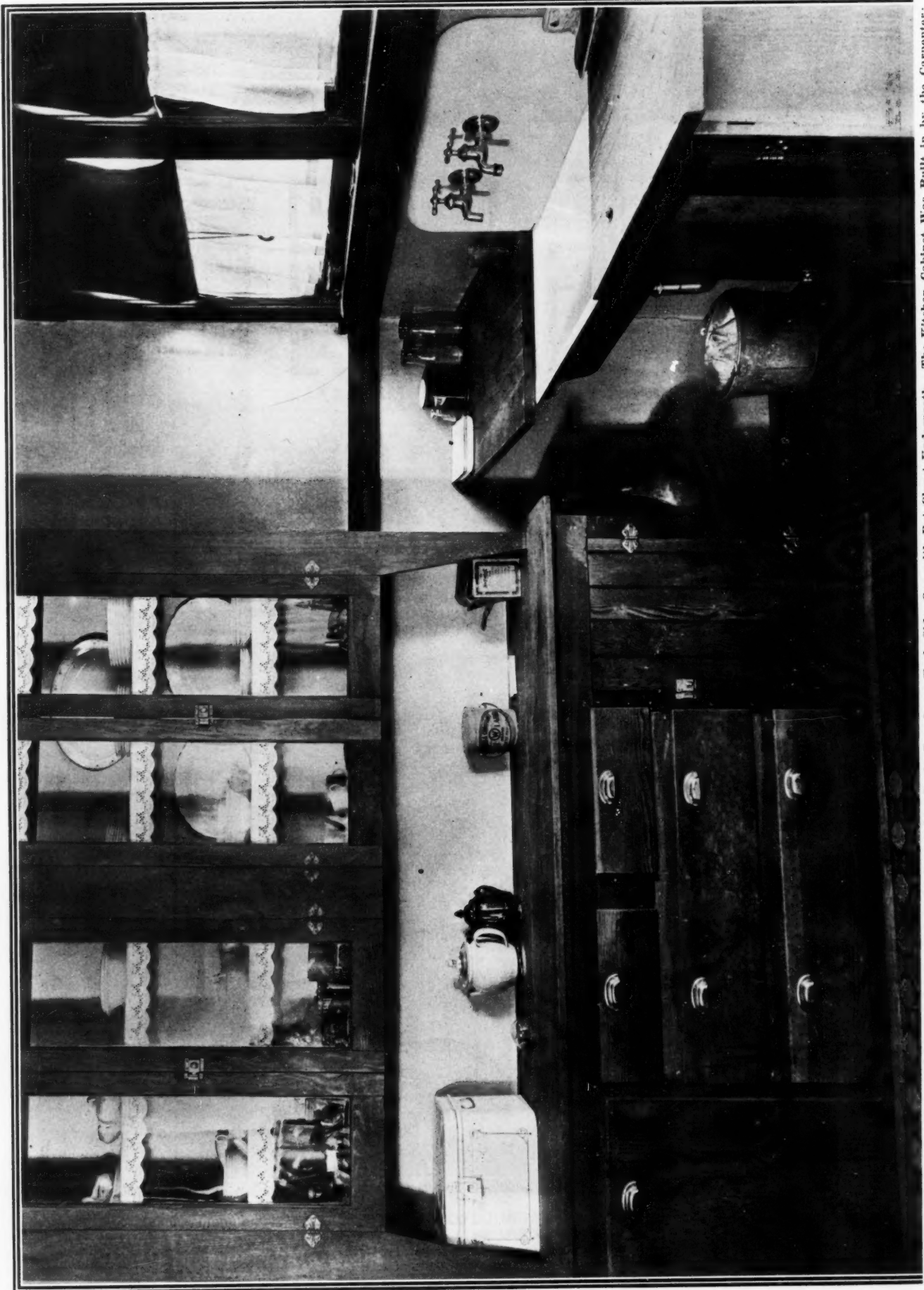
LARGE GAMBREL ROOF HOUSE AND GARAGE. This residence and garage are built at Manhattan Beach, N. Y. Mrs. A. F. Cassidy, Architect and Builder. Walls are of brick, porch columns of cut stone, lintels are of white stone, and asbestos shingles are used on the roof. The type of design used for the house is followed out in the garage. On the first floor, the living room and porch are grouped together and the dining room and sun porch form another group. There is a handy pantry adjoining the kitchen. Four bedrooms and the bath occupy the second floor. The size of house, not including front porches and sun porch, pantry, kitchen wing and rear porch, is 27 feet by 30 feet. The porch widths, front and rear, are each 8 feet, making the over-all dimensions of the house 43 feet by 30 feet.



PLEASANT GABLE ROOF HOUSE WITH STAINED SHINGLE FINISH. The exterior of this house is most attractive, altho its design represents one of the most simple types of construction. The walls are finished with 24-inch shingles treated with a creosoting medium and stained white. The roof is covered with 18-inch shingles treated in a similar manner, with weathered-gray stain. This house is built at Akron, Ohio. Dercum & Beer, Architects. There are nine rooms, including the sun porch, which is one of the attractive features of the first floor. The large sleeping porch on the second floor is a thoroly modern detail. The house measures 34 feet by 27 feet 6 inches on the ground, the sun porch requiring an additional space of 10 feet 6 inches by 14 feet.



ARTISTIC EIGHT-ROOM HOUSE WITH STRUCTURAL TILE WALLS. The walls of this house are of structural tile finished with stucco above the first floor and at the corners of the building down to the level of the first floor window sills. The first floor walls are finished mainly with face brick, which is used in the Roman and the standard sizes. Terra cotta plaques, placed at the upper corners of the brick surfaces, add a pleasing artistic touch. A feature of the exterior design is the large front terrace, the walls of which are of face brick with white stone coping, the floor being of red tile. The interior is exceptionally well arranged. Notice particularly the second floor plan. The size is 36 feet by 34 feet.



Kitchen with Sink Under the Window, Where It Should Be for Light. Drain Boards on Each Side. One with Pot Closet Underneath. The Kitchen Cabinet Was Built in by the Carpenter; and the Housewife Says It's the Best Part of the Room.

The "American Builder" Information Exchange

Will Help You With Your Contract Requirements

OUR Information Exchange believes it can render service and save our readers time and money on many of their contracts. We can tell you where to get that unusual item, can place before you full information concerning both standard goods you will need and improved specialties you may want, and can help you to secure prompt deliveries and right prices. Fill in coupon below, pin same to your business letterhead, and we will send all information we think would help you.

We have.....

We are figuring on.....
(cross out one not wanted)

entire contract
heating contract
plumbing contract
lighting contract
painting contract
masonry contract
concrete contract
(cross out those not wanted)

for building checked below and want all data on materials, equipment and specialties we will need.

	SIZE	TO COST ABOUT	Date Work is to Begin or Date Contract is to be Let.
<input type="checkbox"/> Dwelling House (City or Town).....			
<input type="checkbox"/> Farmhouse.....			
<input type="checkbox"/> Apartment House.....			
<input type="checkbox"/> Schoolhouse.....			
<input type="checkbox"/> Church.....			
<input type="checkbox"/> Theatre.....			
<input type="checkbox"/> Library.....			
<input type="checkbox"/> Public Garage.....			
<input type="checkbox"/> Bank Building.....			
<input type="checkbox"/> Hotel.....			
<input type="checkbox"/> Office Building.....			
<input type="checkbox"/> Store Building.....			
<input type="checkbox"/> Factory.....			
<input type="checkbox"/> Warehouse.....			
<input type="checkbox"/> Dairy Barn.....			
<input type="checkbox"/> Hog House.....			
<input type="checkbox"/> Two-Story Granary.....			
<input type="checkbox"/> Other Farm Building (What?).....			
<input type="checkbox"/> Any Other Building (What?).....			

CONSTRUCTION of said building is as checked below:

EXTERIOR WALLS
☐ All Frame
☐ Stucco
☐ Brick Veneer
☐ Brick (Solid)
☐ Structural Tile
☐ Concrete Blocks
☐ Monolithic Concrete
☐ Stone
☐ Glass (Store Fronts)
☐ Ornamental Terra Cotta

ROOFING
☐ Wood Shingles
☐ Asphalt Shingles
☐ Asbestos Shingles
☐ Metal Tile
☐ Clay Tile
☐ Slate
☐ Composition Roll
☐ Built up Tar and Gravel
☐ Tin Plate
☐ Canvas

SUPPORTING FRAME
☐ Stud and Joist
☐ Heavy Timber Mill
☐ Structural Steel
☐ Reinforced Concrete
☐ Self Supporting Plank
☐ On Concrete Piles
☐ Fireproof Floors
☐ Fireproof Partitions
☐ Metal Lath

INTERIOR FINISH
☐ Soft Wood
☐ Hardwood
☐ Wallboard
☐ Marble
☐ Metal Ceilings and Walls
☐ Metal Doors
☐ Metal Windows
☐ Metal Trim
☐ Metal Grilles, etc.
☐ Composition Flooring

SPECIALTIES, FIXTURES AND EQUIPMENT NEEDED

HEATING PLANT
☐ Warm Air Furnace
☐ Pipeless Furnace
☐ Steam, Direct Radiation
☐ Steam, Blower System
☐ Hot Water System
☐ Vapor System
☐ Fireplaces

PLUMBING
 Indicate number of Fixtures needed
 Closets..... Bathtubs.....
 Shower Baths..... Urinals.....
 Lavatories..... Kitchen Sinks.....
 Laundry Tubs..... Slop Sinks.....
 Drinking Fountains.....
 Chemical Closets.....

WATER SUPPLY—for Country Locations
 What Capacity Needed?.....

LIGHTING AND LIGHTING FIXTURES
 Municipal Service {electricity ☐ gas ☐
 Do you desire quotation on Fixtures?.....
 Private Lighting Plant to be installed,
 Electricity..... Acetylene.....
 Gasoline.....

ELEVATORS
 Passenger..... Freight.....
 Dumb Waiters..... Ash Lifts.....
AUTOMATIC SPRINKLER SYSTEM.....
SCHOOL, CHURCH OR THEATRE EQUIPMENT
 Seats, Pews or Opera Chairs.....
 Blackboards.....
 Library Shelving.....
 Rolling Partitions.....
 Bank Vaults and Safes.....
 Steel Lockers.....

FARM BUILDING EQUIPMENT
 Stanchions for..... cows
 Stock Pens.....
 Stalls for..... horses
 Stock Watering Buckets.....
 Feed and Litter Carriers.....
 Cupola Ventilators.....
 Skylights.....
 Hay Track and Carrier.....
 Barn and Garage Door Hangers.....
 Cup Elevators for Corn and Grain.....
 Lightning Protection.....
 Studding Sockets.....
 Roof Windows.....

BUILDERS' HARDWARE
 Burglar Alarms.....
 Door Checks.....
 Casement Adjusters.....
 Ventilating Sash Operators.....
 Panic Bolts.....
 Weatherstrips.....
 Coal Chutes.....
 Sidewalk Doors.....
 Prism Lights.....
 Refrigerators, Hotel or Market.....
 Refrigerators, Mechanical.....
 Fire Escapes.....
 Fire Shutters.....

HOUSEHOLD UTILITIES
 Garbage Incinerators.....
 Package Boxes.....
 Disappearing Stairs.....
 Disappearing Beds.....
 Sleeping Porch Sash.....
 Refrigerators, Outside Icing.....
 Vacuum Cleaning System.....
 Clothes Dryer.....

Note Here Any Special Requirements Not Marked Above.

Name.....
 Street No. or P. O. Box.....
 Town.....
 State.....

We {are acting as Architects as well as Builders on this job.
 {are not} acting as Architects as well as Builders on this job.

Mail the above to
"AMERICAN BUILDER" INFORMATION EXCHANGE
 1827 Prairie Avenue, Chicago

See Other Side for Equipment, Machinery, Tools and Building Materials Needed

Kitchen with Sink Under the Window, Where It Should Be for Light, Drain Boards on Each Side, One with Pot Closet Underneath. The Kitchen Cabinet Was Built in by the Carpenter, and the Housewife Says It's the Best Part of the Room.

The "American Builder" Information Exchange

Data Sheet (Continued)

I desire information regarding the Building Materials, Equipment, Machinery and Tools checked, for which I am now in the market.

BUILDING MATERIALS

- | | | | |
|--|---|---|---|
| <input type="checkbox"/> Art Glass | <input type="checkbox"/> Fireproofing | <input type="checkbox"/> Paints, Fire Retardant | <input type="checkbox"/> Sash Pulleys |
| <input type="checkbox"/> Awning Cloth | <input type="checkbox"/> Fireproof Shutters | <input type="checkbox"/> Pipe, Conductor | <input type="checkbox"/> Screen Wire Cloth |
| <input type="checkbox"/> Battens, Metal | <input type="checkbox"/> Flooring, Composition | <input type="checkbox"/> Pipe, Steel | <input type="checkbox"/> Screens, Window and Door |
| <input type="checkbox"/> Beds, Disappearing | <input type="checkbox"/> Flooring, Hardwood | <input type="checkbox"/> Pipe, Warm Air Furnace | <input type="checkbox"/> Sheathing Papers |
| <input type="checkbox"/> Boiler and Pipe Covering | <input type="checkbox"/> Floor Finish | <input type="checkbox"/> Pipe, Vitrified Clay | <input type="checkbox"/> Sheet Metal Work, Galvanized |
| <input type="checkbox"/> Boilers, Heating Plant | <input type="checkbox"/> Floor Hardeners | <input type="checkbox"/> Plaster, Gypsum or Hardwall | <input type="checkbox"/> Shingle Stains |
| <input type="checkbox"/> Bolts, Expansion | <input type="checkbox"/> Floor Hinges | <input type="checkbox"/> Plaster Board | <input type="checkbox"/> Skylights |
| <input type="checkbox"/> Brick, Common | <input type="checkbox"/> Furnaces, Warm Air | <input type="checkbox"/> Plaster Blocks, Partition | <input type="checkbox"/> Slate Blackboards |
| <input type="checkbox"/> Brick, Face | <input type="checkbox"/> Garbage Burners | <input type="checkbox"/> Plate Glass | <input type="checkbox"/> Slate, Structural |
| <input type="checkbox"/> Brick, Fire | <input type="checkbox"/> Garage Door Hardware | <input type="checkbox"/> Plumbing Fixtures | <input type="checkbox"/> Sound Deadeners |
| <input type="checkbox"/> Building Papers | <input type="checkbox"/> Hay Track | <input type="checkbox"/> Prism Lighting | <input type="checkbox"/> Store Front Construction |
| <input type="checkbox"/> Calcimine | <input type="checkbox"/> Heaters, Instantaneous | <input type="checkbox"/> Radiators | <input type="checkbox"/> Structural Steel |
| <input type="checkbox"/> Caulking and Glazing Compound | <input type="checkbox"/> Heaters, Tank | <input type="checkbox"/> Refrigerators, Outside Icing | <input type="checkbox"/> Stucco |
| <input type="checkbox"/> Ceilings, Metal | <input type="checkbox"/> Insulating and Deadening Materials | <input type="checkbox"/> Reinforcing Bars | <input type="checkbox"/> Tanks, Cypress |
| <input type="checkbox"/> Cement, Portland | <input type="checkbox"/> Lighting Fixtures | <input type="checkbox"/> Registers | <input type="checkbox"/> Tanks, Steel |
| <input type="checkbox"/> Coal Chutes | <input type="checkbox"/> Lighting Systems | <input type="checkbox"/> Roofing, built up Tar and Gravel | <input type="checkbox"/> Terra Cotta, Ornamental |
| <input type="checkbox"/> Closets, Chemical | <input type="checkbox"/> Lightning Rods | <input type="checkbox"/> Roofing, Canvas | <input type="checkbox"/> Tile, Clay Structural |
| <input type="checkbox"/> Columns, Porch, etc. | <input type="checkbox"/> Limestone | <input type="checkbox"/> Roofing, Clay Tile | <input type="checkbox"/> Tile, Floor |
| <input type="checkbox"/> Concrete Inserts | <input type="checkbox"/> Linseed Oil | <input type="checkbox"/> Roofing, Ready Roll | <input type="checkbox"/> Varnish |
| <input type="checkbox"/> Creosote | <input type="checkbox"/> Mantels, Wood | <input type="checkbox"/> Roofing, Shingles, Asbestos | <input type="checkbox"/> Ventilators |
| <input type="checkbox"/> Door Track and Hangers | <input type="checkbox"/> Metal Columns | <input type="checkbox"/> Roofing, Shingles, Asphalt | <input type="checkbox"/> Wallboard |
| <input type="checkbox"/> Doors, Hardwood Veneer | <input type="checkbox"/> Metal Lath | <input type="checkbox"/> Roofing, Shingles, Metal | <input type="checkbox"/> Wall Ties |
| <input type="checkbox"/> Doors, Fire-Resisting | <input type="checkbox"/> Metal Lumber | <input type="checkbox"/> Roofing, Shingles, Wood | <input type="checkbox"/> Waterproofing |
| <input type="checkbox"/> Dumb Waiters | <input type="checkbox"/> Mortar Colors | <input type="checkbox"/> Roofing, Slate | <input type="checkbox"/> Water Supply Plants |
| <input type="checkbox"/> Elevating Machinery, Grannary | <input type="checkbox"/> Nails, Cut Iron | <input type="checkbox"/> Roofing, Tin | <input type="checkbox"/> Windows, Casement |
| <input type="checkbox"/> Enamel, White | <input type="checkbox"/> Nails, Galvanized | <input type="checkbox"/> Safety Treads | <input type="checkbox"/> Windows, Reversible |
| <input type="checkbox"/> Fireplace Fixtures | <input type="checkbox"/> Paints | <input type="checkbox"/> Sash, Steel | <input type="checkbox"/> Wire Glass |
| | | | <input type="checkbox"/> Wood Dye |

CONTRACTORS' EQUIPMENT

- | | | | |
|---|---|--|--|
| <input type="checkbox"/> Air Compressors | <input type="checkbox"/> Chutes, Concrete | <input type="checkbox"/> Gravel Washing Plants | <input type="checkbox"/> Saw Rigs |
| <input type="checkbox"/> Back Fillers | <input type="checkbox"/> Column Clamps | <input type="checkbox"/> Hoists, Electric | <input type="checkbox"/> Scaffold Brackets |
| <input type="checkbox"/> Bar Benders | <input type="checkbox"/> Concrete Tampers | <input type="checkbox"/> Hoists, Gasoline or Steam | <input type="checkbox"/> Scrapers |
| <input type="checkbox"/> Blocks and Tackle | <input type="checkbox"/> Contractors' Lights | <input type="checkbox"/> House Moving Trucks | <input type="checkbox"/> Screens, Sand and Gravel |
| <input type="checkbox"/> Buckets, Dredging and Excavating | <input type="checkbox"/> Cranes, Locomotive | <input type="checkbox"/> Jacks | <input type="checkbox"/> Shovels, Steam |
| <input type="checkbox"/> Cableways | <input type="checkbox"/> Crushers and Pulverizers | <input type="checkbox"/> Ladders | <input type="checkbox"/> Sidewalk Forms |
| <input type="checkbox"/> Cars, Dumping and Industrial | <input type="checkbox"/> Derricks | <input type="checkbox"/> Loaders, Wagon | <input type="checkbox"/> Trailers |
| <input type="checkbox"/> Carts, Concrete | <input type="checkbox"/> Drills | <input type="checkbox"/> Mixers, Cement and Concrete | <input type="checkbox"/> Trailers, Automobile or Truck |
| <input type="checkbox"/> Cement Block Machines | <input type="checkbox"/> Engines, Gas | <input type="checkbox"/> Mixers, Mortar | <input type="checkbox"/> Transits and Levels |
| <input type="checkbox"/> Cement Ornamental Molds | <input type="checkbox"/> Engines, Steam | <input type="checkbox"/> Motor Trucks | <input type="checkbox"/> Typewriters |
| <input type="checkbox"/> Cement Tile Machines | <input type="checkbox"/> Floor Scrapers | <input type="checkbox"/> Pile Driving Machinery | <input type="checkbox"/> Wagons, Dumping |
| | <input type="checkbox"/> Floor Surfacers, Electric | <input type="checkbox"/> Pumps, Contractors' | <input type="checkbox"/> Wheelbarrows |
| | <input type="checkbox"/> Forms, Steel, for Concrete | <input type="checkbox"/> Salamanders | |

POWER SHOP EQUIPMENT

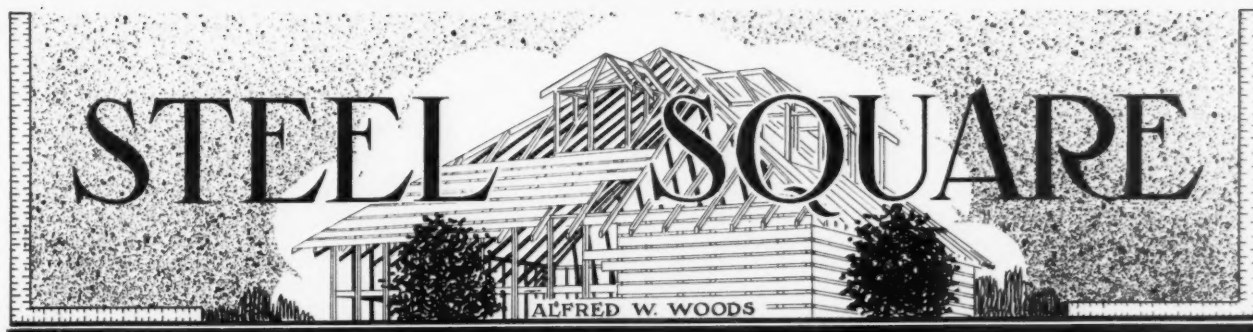
- | | | | |
|---|---|--|---|
| <input type="checkbox"/> Hand and Foot Power Machines | <input type="checkbox"/> Dry Kiln | <input type="checkbox"/> Grinders | <input type="checkbox"/> Sanders |
| <input type="checkbox"/> Electric Motors | <input type="checkbox"/> Dust Collecting System | <input type="checkbox"/> Jointers | <input type="checkbox"/> Sash Trimmers |
| <input type="checkbox"/> Gas Engines | <input type="checkbox"/> Band Saws | <input type="checkbox"/> Lathes | <input type="checkbox"/> Shapers |
| <input type="checkbox"/> Safety Guards | <input type="checkbox"/> Borers | <input type="checkbox"/> Mortisers | <input type="checkbox"/> Tenoners |
| <input type="checkbox"/> Shop Trucks | <input type="checkbox"/> Saw Tables | <input type="checkbox"/> Moulders | <input type="checkbox"/> Rubbing Machines |
| <input type="checkbox"/> Pulleys | <input type="checkbox"/> Swing Cut Off Saws | <input type="checkbox"/> Planers | <input type="checkbox"/> Cutter Heads |
| <input type="checkbox"/> Glue Pots and Clamps | <input type="checkbox"/> Saw Rigs | <input type="checkbox"/> Bench Planers | <input type="checkbox"/> Machine Knives |
| | <input type="checkbox"/> Combination Woodworker | | |

MECHANICS' TOOLS

- | | | | |
|--|--------------------------------------|---|---|
| <input type="checkbox"/> Augur and Bits | <input type="checkbox"/> Gauges | <input type="checkbox"/> Mortisers, Lock | <input type="checkbox"/> Sharpening Stones |
| <input type="checkbox"/> Braces | <input type="checkbox"/> Gimlets | <input type="checkbox"/> Planes | <input type="checkbox"/> Shingle Nailers, Automatic |
| <input type="checkbox"/> Cement Workers' Tools | <input type="checkbox"/> Grinders | <input type="checkbox"/> Pliers | <input type="checkbox"/> Shovels |
| <input type="checkbox"/> Chests, Tool | <input type="checkbox"/> Hammers | <input type="checkbox"/> Plumbs | <input type="checkbox"/> Squares |
| <input type="checkbox"/> Chisels | <input type="checkbox"/> Hatchets | <input type="checkbox"/> Rules | <input type="checkbox"/> Tape Lines |
| <input type="checkbox"/> Clamps | <input type="checkbox"/> Lanterns | <input type="checkbox"/> Saws | <input type="checkbox"/> Trowels |
| <input type="checkbox"/> Compasses | <input type="checkbox"/> Levels | <input type="checkbox"/> Saw Sharpening Tools | <input type="checkbox"/> Vises |
| <input type="checkbox"/> Files | <input type="checkbox"/> Mitre Boxes | <input type="checkbox"/> Screw Drivers | <input type="checkbox"/> Wrenches. |

Fill in Your Name and Address on Other Side of This Sheet and Mail to

"American Builder" Information Exchange
1827 Prairie Avenue, Chicago



Possibilities of the Steel Square

ILLUSTRATING THE GROUND WORK OR GOVERNING POINTS IN THE DEVELOPMENT OF CORRESPONDING CURVED RAFTERS.

By A. W. Woods

IN the last number of this magazine we talked on the formation of the rafters for an irregular vaulted ceiling, and as we did not say all that we wanted to say, we have thought it would be a good idea to carry the subject a little further by applying the same principle to curved roof rafters, but in this we will go a little further in illustrating how the formation may be determined by the use of the circle and right-angled triangle, the latter being formed by the manipulation of the steel square.

In Fig. 1 is shown the section of a half round mould which we will let represent a semi-circular roof, that is, the curve representing the shape of the common rafters. The next thing is to find or rather develop the corresponding shape for the hip rafter. Now, there are numerous ways of arriving at the required curve, but it is not our purpose to show the usual diagrams resorted to in finding this curve, but back of it all, no matter what form of diagram is used, they must conform to the universal rule as determined by the divisions of the circle and the square in their relation to one another.

In the plan of this figure are shown the octagon, square and equilateral triangle along with their respective curves for the hip.

Now, if this mould was put in a mitre box and cut on the 0 or 180-degree line the end would represent the curve of the common rafters.

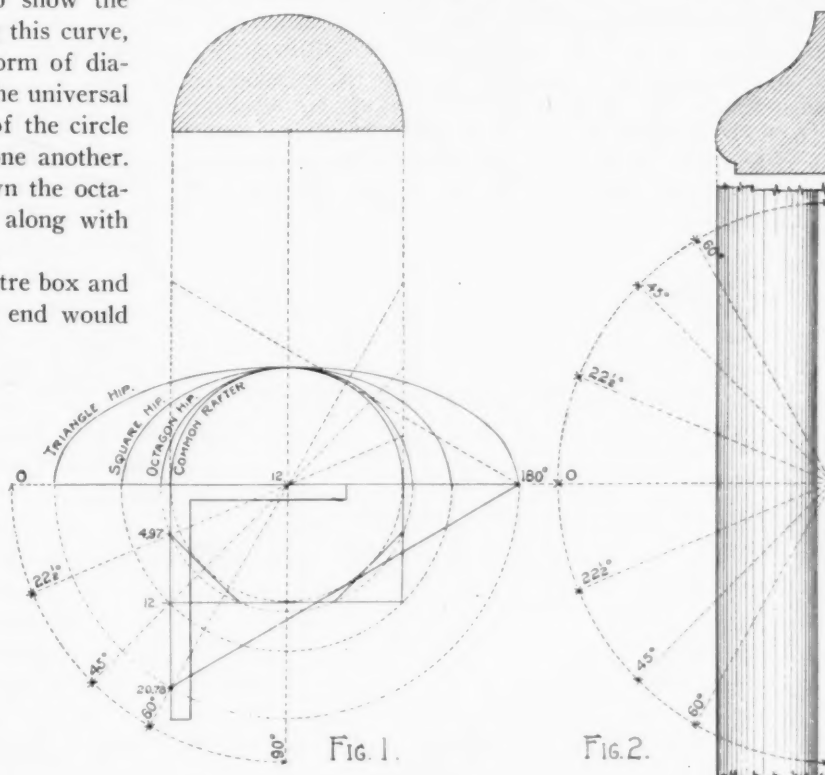
If cut on the $22\frac{1}{2}$ -degree line, it would, when looking square at it, represent the required curve for the corresponding octagon hip. If cut on the 45-degree line it would represent the hip for the square corner, and if cut on the 60-degree line would represent the hip for triangle. The elevations of these rafters, in connection with the plan, are shown in comparison with that for the common rafter.

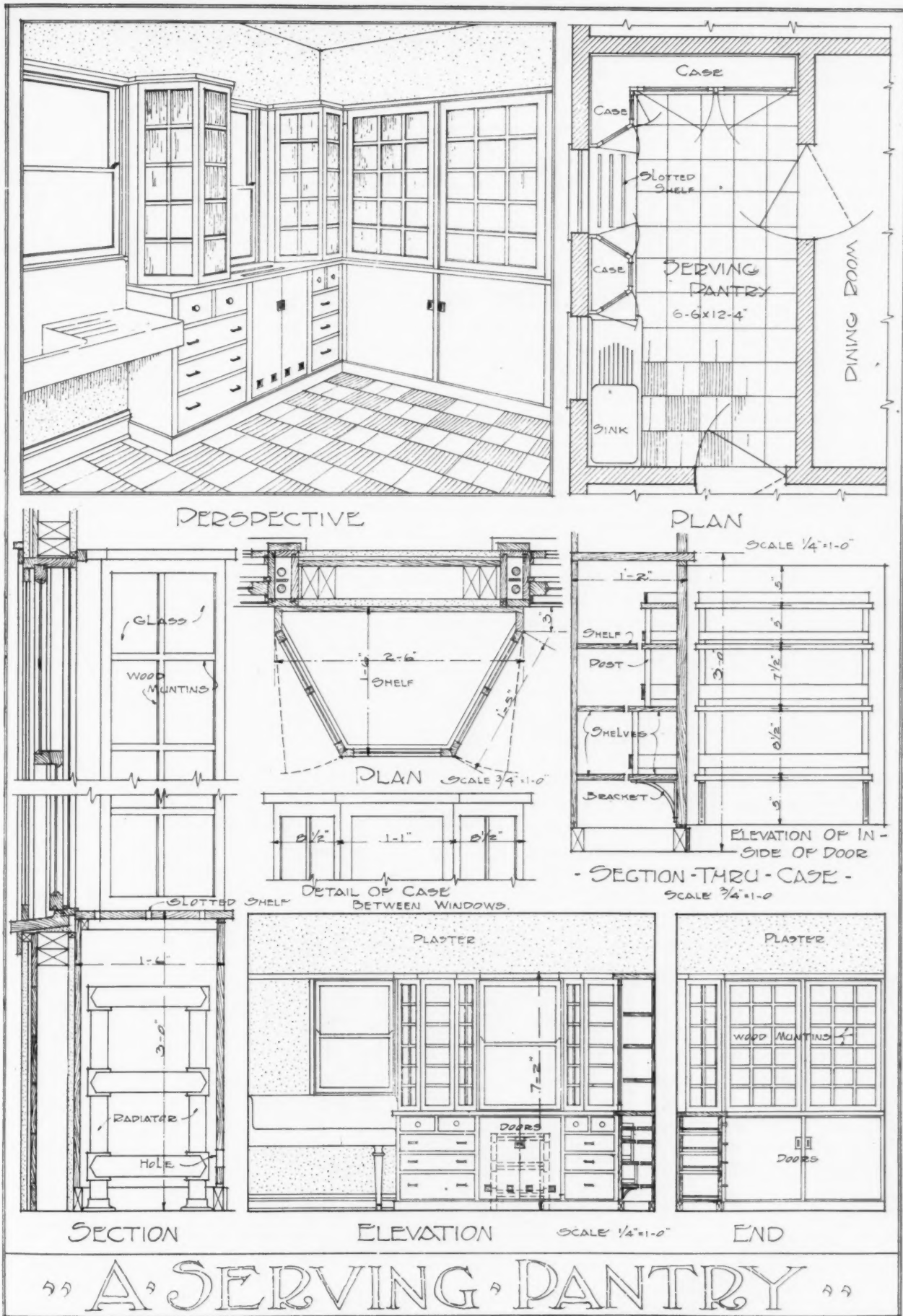
It might be well while we are at

this point to explain what determines the angle that the seat of the hip rests from that of the common rafter. Briefly it is this: As the seat of the common rafter rests on the 180-degree line, the desired angle may be readily found by dividing the 180 by the number of sides representing the polygon. Thus the octagon would rest at $22\frac{1}{2}$, the square at 45, and the triangle at 60 degrees respectively.

In connection with this figure the relation of the steel square is shown to these angles. The intersecting points are given in decimals.

In Fig. 2 is shown a different shape of mould. Suppose we put this mould in a mitre box and cut on the 0 line the end would show as in the section and would represent the curve of the common rafter for any shape the building may have but if cut on the $22\frac{1}{2}$ -





"A SERVING PANTRY"

Perspective Sketch, Plan and Details of a Well Equipped Serving Pantry. Ralph W. Ermeling, Architect.



The Builder as a Fireguard

CONSTRUCTION METHODS HE SHOULD USE FOR RETARDING FIRE—DETAILS OF FIRE STOPS

By Ralph V. Ermeling, Architect

IT would hardly seem necessary to remind builders of the dangers of poor construction in connection with fires, but it is a fact that many a home would be standing unburned today if a little thought had been given to the subject of how to prevent fire spreading thruout a building. Fireproof building does not enter into the question. There may be many good reasons why it is not possible or desirable to build of nonburnable materials, and it is certain that the great majority of buildings thruout the country are of ordinary construction. In this class buildings are constructed principally of masonry, lumber, stucco over wood framing, with wooden partitions covered with wood lath and plaster or wall board of some kind.

Now, the problem is how to keep a fire confined to the space where it started without passing into any other part of the building. Delaying the spread of fire may save life or terrible suffering from burns, and it will surely save property and the money invested therein. There is no one feature of the house construction which will contribute more to its safety in case of fire than well placed, efficient firestops. Their use affords a better chance to extinguish the fire before it does much damage.

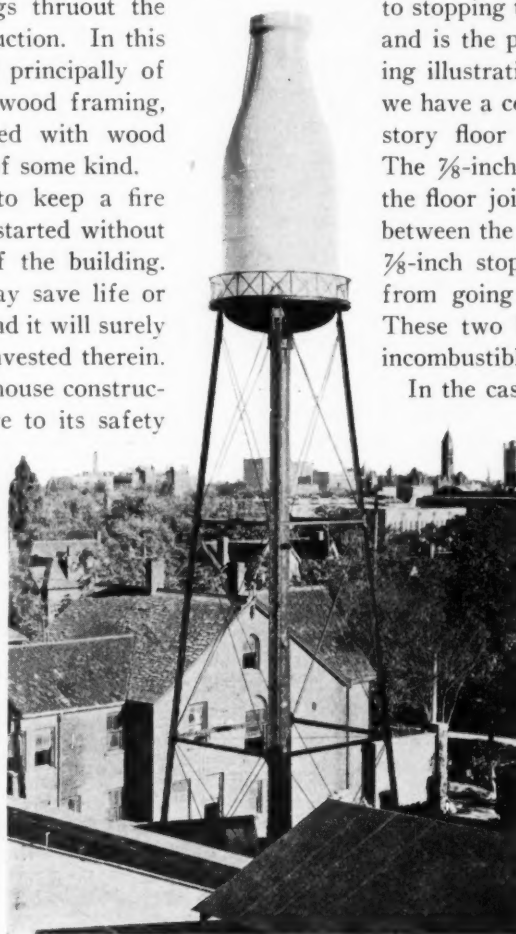
There is nothing that assists a fire to burn more than a flue of some kind. That is why we have chimneys. Take an ordinary frame wall of a house for instance. The space between the studding and the outer sheathing and the lath and plaster forms a vertical flue. If a fire starts in the basement the flames, smoke and gases can pass straight up into the attic. If the fire starts in the attic the sparks

fall down the dry wooden hollow spaces. And fires have a habit of starting in unexpected places. A fire which starts in rooms which are occupied may, perhaps, be easily extinguished; but if it starts in some unfrequented or inaccessible place the results are disastrous.

Fire-stopping should be arranged to cut off all concealed draft openings, and form an effectual horizontal fire barrier between stories. This also applies to stopping the passage of fires between floors, and is the principle on which the accompanying illustrations are based. In Figs. 1 and 2 we have a common case, we will say a second-story floor where it joins the frame wall. The $\frac{7}{8}$ -inch board should be fully as wide as the floor joist is deep. That will prevent fire between the joists from passing upward. The $\frac{7}{8}$ -inch stop on the ribbon will stop the fire from going up the wall between the studs. These two boards hold the mineral wool or incombustible filling in place.

In the case illustrated by Fig. 3 fire is kept from passing up from the basement by the $\frac{7}{8}$ -inch board fitted in between the joists over the sill. This board also acts as a retainer for the filling behind it. If the fire is up higher in the house, Fig. 4 shows how it may be prevented from passing on up into the attic between the roof rafters. This case is where a part of the room under the roof has a sloping ceiling.

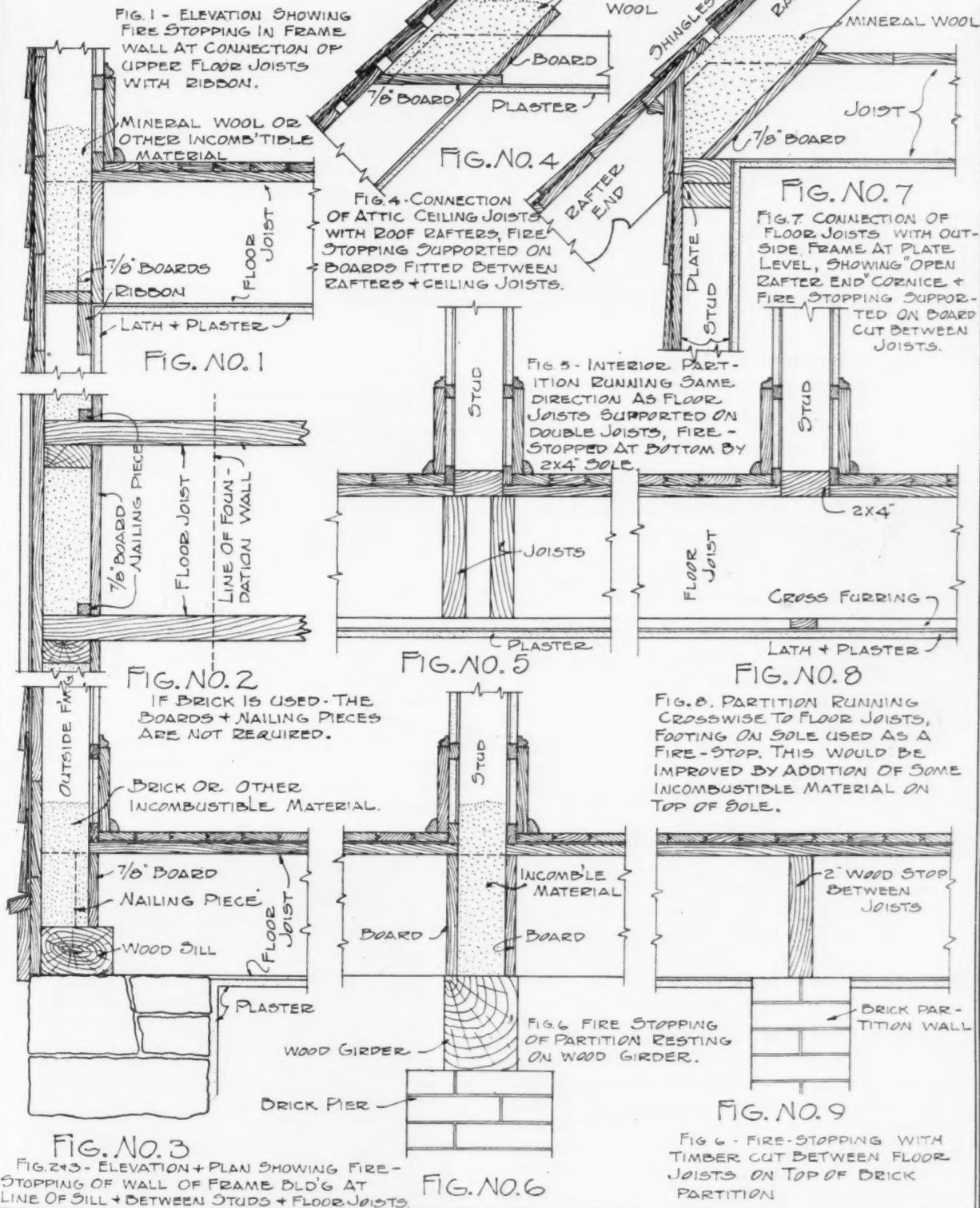
Figure 7 shows a variation in a similar instance where there is a plate at the top of the studs. The reason for giving this illustration is that eaves and cornices are always



MILK IS HIGH THIS YEAR!
Novel Water Tank of the City Dairy Co., Toronto, Ont., Reproduces in Giant Size Their Milk Bottle. It Is 13 Feet in Diameter and Has a Capacity of 25,000 Gallons. Built by the Canadian Chicago Bridge & Iron Company.

(Continued to page 132.)

DETAILS OF CONSTRUCTION FOR RETARDING FIRE



OUT ON THE JOB

What Builders *are* Finding Good

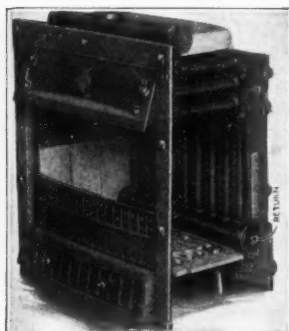


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seller of any article we describe. This information is, however, kept on file and will be mailed to anyone interested; address American Builder Information Exchange, 1827 Prairie Ave., Chicago.

Hot Water Circulating Fireplace Heater

The sectional perspective view shows the heating unit of a system which utilizes the fireplace to heat several rooms in addition to the room in which it is placed, by the circulation of hot water thru radiators placed in these rooms. As far as external appearance is concerned, the fireplace is no different than any other fireplace having a cast iron face. Across the back and top of this fireplace, however, there is placed a hot water heating coil of charcoal iron pipe which is capable of furnishing 200 square feet of radiation in addition to the heat radiation from the fireplace into the room.



Sectional Perspective View of Fireplace Heater Showing Arrangement of Coils.

Piping is carried from the 2-inch flow pipe at the top of the heating coil to the various radiators and a return is installed from each radiator back

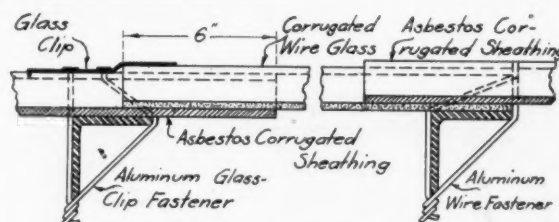
to the bottom of the heating coil. The consumption of water in a properly installed system is about four gallons each season, the same water being used continuously, as it circulates from the heating coil thru the pipe and radiators and back to the coil to be reheated. No water pressure is required and the heater may, therefore, be used in suburban and country homes as well as in the city.



Corrugated Wire Glass Skylight

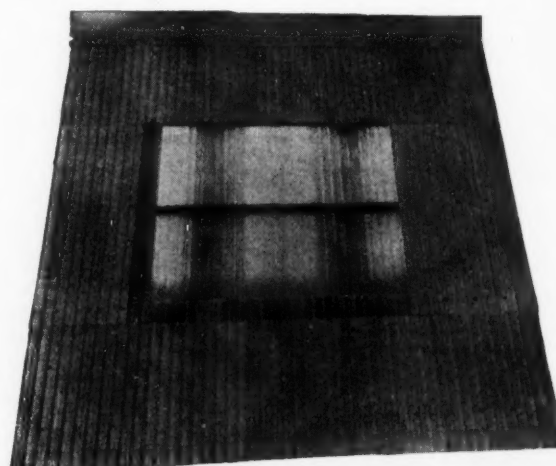
With the development of corrugated asbestos roofing and sheathing there has been brought into use a type of skylight which is notable for its extreme simplicity, easy installation and low cost. This skylight consists of a sheet of corrugated wire glass which nests perfectly with the corrugated asbestos, producing a construction which is non-leakable and fireproof.

It is clearly shown in the illustration that the cost of frames and flashing is eliminated. The glass is placed in the roof



Detail Showing Method of Applying Corrugated Wire Glass Skylight to Asbestos Corrugated Sheathing.

in much the same manner that a sheet of the corrugated asbestos is attached, a metal clip being added to hold the glass from slipping. The roof is usually placed on angle iron purlins, a special aluminum wire fastener being used to hold the sheets in place. These fasteners are placed at the high point of the corrugations and have a soft metal head which closes the hole, making leakage impossible. At the bottom of the skylight sheet the aluminum wire glass clips above mentioned are installed in the same manner as the fasteners. These features are shown clearly in the sectional detail accompanying.



Photographic View of Corrugated Wire Glass Skylight Showing Simplicity of Its Construction.

Humidity Is Important in Heating Problems

Most of us have a general idea of the effect of too little moisture in the air we breathe. We know that dry air has a harmful effect on the skin, the hair, the nose, the tonsils and other glands and tissues and we know that it takes more coal to make us comfortable when the air is dry than is required when proper humidity is maintained. We know that dry air ruins our furniture, warps the woodwork and causes plants to wither and die. We know these things, but what do we do about it?

The illustration shows the details of a combination radi-



Perspective Detail Showing Parts and Indicating Strength of Humidifier, Which Also Serves as Shelf or Seat.

ator seat and humidifier which effectively eliminates dry air from the room in which it is installed and at the same time furnishes a most attractive piece of furniture. The moisture is supplied to the air by evaporation from a heavy galvanized metal tank which covers the entire top of the radiator and is completely concealed by the art metal top. The back edge of this tank is shaped in such a way that a portion of the upward moving air is caused to pass across the surface of the water in the tank, after which it is caught by the air passing the forward edge of the top and carried into the atmosphere of the room. The air passing over the water takes with it the water vapor resulting from evaporation so that the atmosphere of the room is constantly being supplied with moisture from the humidifier.

The art metal top is constructed of No. 12 gauge pickled steel and the finish, which is furnished in exact imitation of any wood specified, is baked on at 280 degrees Fahrenheit. This finish is durable, elastic and cannot be affected by the heat from the radiator. There is a back piece of galvanized iron which causes the humidifier to act as a shield, protecting the wall decorations and throwing the heated air out into the room.

Some of the most important features of this device are, then, that it supplies moisture to the air, it produces an

even temperature by deflection of the heated air away from the wall, it protects the wall decorations and draperies, it will support 600 pounds as a seat or shelf and it aids in harmonizing the radiator with its surroundings.

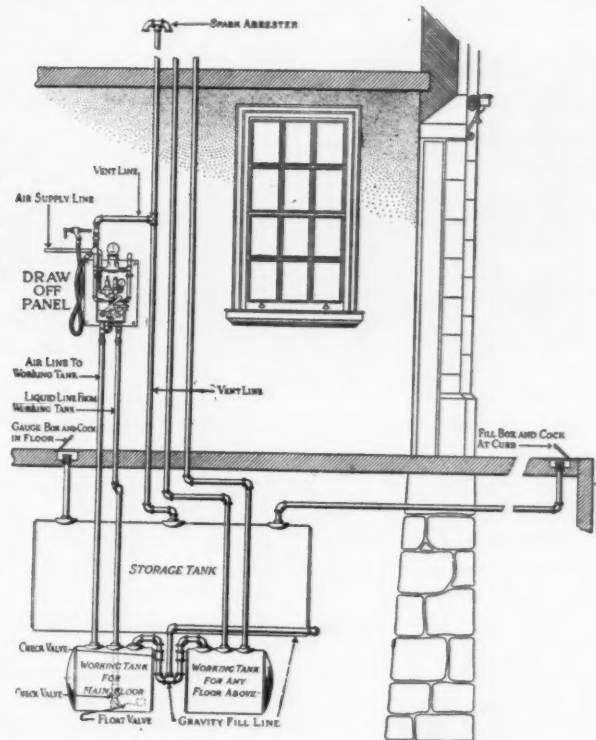


Gasoline Delivered by Air Pressure

A system which stores any liquid and distributes it by means of air pressure is shown in the accompanying illustration. Its most common use is in the garage where it is used for the storage and distribution of gasoline or oil. Nearly every public garage has equipment for compressing air used to inflate tires; this equipment may also be used to operate the gasoline delivery system.

The system consists of a large storage tank, smaller working tanks and draw-off panels for each of the working tanks. Gasoline is piped into the storage tank, from the supply wagon, from which it runs by gravity into the working tanks. The working tanks are filled automatically between each discharge and in case the level of the liquid in the working tank becomes too low during the discharge, a float valve closes the discharge line and allows the tank to fill before any more gasoline is taken from the tank.

To operate the panel, exert hand pressure on a finger valve and move the handle to the left; this closes vent line of working tank, opens air pressure and gasoline delivery valves on panel. Liquid will flow thru the meter, where the amount of discharge is indicated, and out thru hose and discharge nozzle. To shut off flow, return handle to original position, which allows air to escape from working tank, which refills



Showing Principal Parts of Air Pressure Liquid Storage and Delivery System.

with liquid. The liquid cannot flow unless hand pressure is exerted on the finger valve, which provides for safe operation. A check valve holds liquid in the system so that discharge begins as soon as panel is adjusted for it.

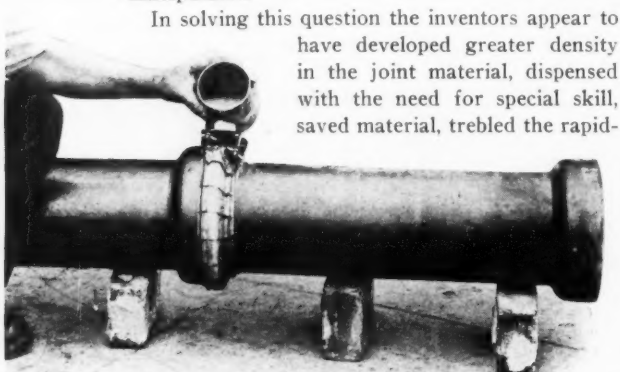
Contractors and building material and equipment dealers are qualified to make installations of this system. The manufacturers maintain a staff of engineers and designers to assist their agents in making installations.



Perfect Tile Joints Made With New Mold

Good results lately achieved in the use of a poured joint of portland cement grout for vitrified sewer pipe indicate that this method of joining pipe may enjoy considerable use from this time forth.

Stringent rules for inspection of building drainage have prompted a large amount of research toward the development of a joint that is less dependent upon the element of special skill for success than is the case with the ordinary hand troweled joint of cement. Previous experiments have been along the line of discovering a new material and some of them have been appreciably successful, but the latest research has been based upon the idea that a new material was not needed so much as a new method of applying it; one which would obviate the cracking of previously made green joints, when the ensuing joints were being manipulated.



The "Fish-Scale" Type of Mold Used to Form Poured Grout Joints Between Vitrified Sewer Pipe.

ity of operation and done away with the need for so much working room in the trench. Against these advantages must be reckoned the expense of equipping with joint molds and also the invariable caulking of the joint with oakum, before the grout is poured.

Several molds to accomplish the purpose have been designed and patented. The one used in a recent series of tests by the Sewer Pipe Manufacturers' Association consisted of a series of galvanized sheet iron sections overlapping like scales and strung on two small steel cables which clamp around the two sections of pipe to be joined during the pouring operation and affording a degree of rigidity for the line of pipe during the time of setting.

The Akron tests were conducted with the twofold object of determining the imperviousness of the joint and testing the comparative merit of various consistencies of grout. It was found that a mixture only slightly less ductile than thick cream was about the right consistency. A one and one mixture of portland cement and sharp sand of medium fineness, such as is used in the final grouting of a brick pavement, made the best showing. Every joint poured with this mixture

was impervious, withstanding a test of 15 pounds per square inch without so much as a seep.

Two joints poured with cement of the consistency of mush had flaws at the lower side of the joint, showing that the thicker mixture of cement had failed to penetrate to the bottom of the mold.

The poured joint is neater in appearance and wastes no cement. It is not uncommon to use three times as much material in a troweled joint as the poured joint requires.



Close View of Poured Grout Joints Indicating Their Neat Appearance and Economy of Materials.

The main point, however, is that the poured joint seems to afford a means by which unskilled labor, with ordinarily careful supervision, can produce a joint that will stand the most exacting tests proposed by sanitary codes and fully satisfying the requirements of building drainage.

HENRY P. BOYNTON.

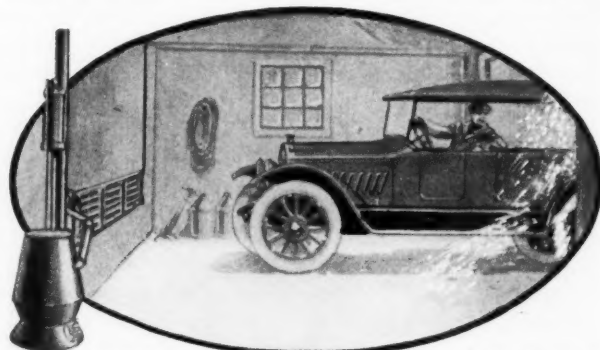


Self-Regulating Garage Heating System

The man who desires or must have all-year-around service from his automobile is confronted with the problem of garage heating. A freeze-up is costly and the inconvenience and strain on electrical equipment of starting a cold engine is something which must be eliminated. The heating system which meets every requirement must operate economically with little attention and must maintain the required temperature uniformly. This requires automatic regulation.

A simple installation of a system which meets these requirements is shown in the accompanying illustration. For the one-car garage, the equipment consists of a self-regulating heater of cast iron, 30 inches high, a radiator 1 foot 1 inch high by 7 feet 3 inches long, with the necessary pipe connections and radiator supporting brackets. For larger garages, another radiator of the above size is added for each additional car and there are two larger heaters which are used in place of the smallest size in the larger garages. The largest installation from one heater is for a ten-car garage.

The water is placed in the system thru the expansion tank, which is at the high point of the system. This expansion



Self-Regulating Garage Heater Which Requires Little Room and Maintains Uniform Temperature with Little Attention.

tank is used in connection with an air-tight float with a lever and connecting rod to actuate a griddle damper in the heater top, which forms the regulating feature—a very important part of the system. In cold weather the water in the lower part of the expansion tank contracts, lowering the float and opening the damper, thru the lever mechanism. As the garage becomes warmer, the reverse operation takes place and the system quickly comes to the point of steady operation as external variations are overcome.

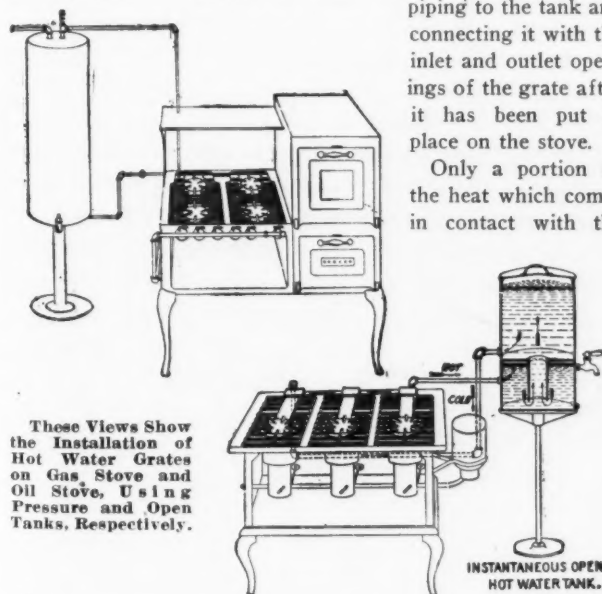
Another important feature is found in the construction of the cast iron parts of the heater. The water jacket completely surrounds the combustion chamber of the heater so that there is no excessive heat on the external surfaces of the heater to injure the car driven close to it. In place of a great amount of heat being concentrated at one point, this system distributes this source of heat across the end of the garage, and radiation gives it to the atmosphere in the building, setting up a circulation of air which carries the heat to all parts of the interior. The heater may be situated in a corner of the garage, in a basement, pit or it may be placed in a separate room or even in a detached small house.



Hot Water Grate for Gas and Oil Stoves

A hollow grate which, when placed on a gas or oil stove in the position of the ordinary grate and properly connected to a tank, will supply hot water for the household by utilizing a portion of the heat which is ordinarily wasted in preparing a meal, is shown in the accompanying illustration. These grates are made to fit the stove so that the installation of the equipment is simply a matter of installing the proper piping to the tank and connecting it with the inlet and outlet openings of the grate after it has been put in place on the stove.

Only a portion of the heat which comes in contact with the



These Views Show the Installation of Hot Water Grates on Gas Stove and Oil Stove, Using Pressure and Open Tanks, Respectively.

INSTANTANEOUS OPEN HOT WATER TANK.

lower surface of a cooking utensil is absorbed. The remainder is deflected outward and downward and is ordinarily allowed to rise into the air above the stove. With the hot water grate installed, however, a portion of this deflected heat is absorbed by the metal which encircles the burner just below the utensil. This heat is, in turn, absorbed by the water within the metal shell of the grate. Water circulates from the tank around the grate and back to the tank again, constantly absorbing heat from the grate as long as the burner is in operation.

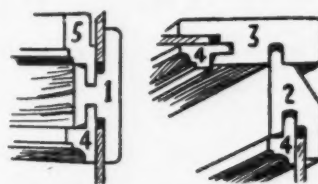
The grate may be for a single burner, such as is commonly the case on an oil stove, where a separate grate is used for each burner; or the grate may be for two burners, the hollow shell being continuous around each of them, as is the

case on an ordinary gas stove, where each grate serves a front and a back burner. The tank may be of the pressure type with cold water supply automatically taken care of, or an open tank may be used, which must be filled by hand as often as is required.



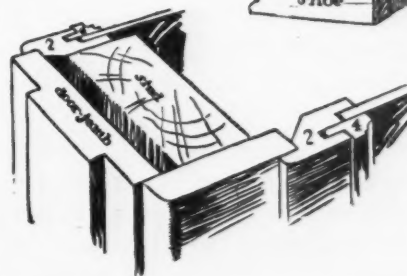
Flange Moulding Saves Money on Wall Board Jobs

There are any number of places where wall board might be used to advantage, but where it has not been used because of difficulty in installation. The ordinary installation of wall board requires the driving of many nails and the exact framing of the supporting structure. These items increase the cost of using wall board and the method is fundamentally unsatisfactory in a great many cases because there is no



Stop Numbered 5 Forms Picture Mould, Left Detail. Right Detail Shows Wall and Ceiling Joint.

Upper Detail Shows How Moulding Numbered 2 Forms Connection Between Wall Board and Baseboard. Lower Detail Shows How Moulding Numbered 2 May be Used as Door Casing and Also How It Is Used in Connection with Regular Casing.



allowance made for expansion and contraction of the wall board. Working with these things in mind, a Tennessee firm has perfected a patent flange moulding which makes installation of the wall board easy, mechanical and economical. When the moulding is used, headers and nailing pieces are eliminated, the wall board is not nailed along the edges, expansion and contraction is automatically taken care of and exact spacing of studding and ceiling joist is disregarded, obviating much trouble where door and window openings occur and allowing a better panel arrangement.

At the time of installation, this moulding is especially appreciated in finishing the ceiling. For wall board finish over brick walls, old plaster and other uneven surfaces it works to very good advantage, eliminating the use of furring strips. The wall board may be quickly and easily removed at any time from any panel made with this moulding, since there are no nails driven thru the wall board at any point. The illustration shows, in a limited way, the application of the moulding in a few of the many parts of a house interior or other place where wall board has been found readily adaptable. The mechanical features are evident and the appearance is very attractive. The standard forms, which include four mouldings and three stops, are manufactured in clear yellow pine, but special forms can be obtained in oak, gum, birch or mahogany.

The American Builder Information Exchange will be pleased to furnish on request the name and address of the parties responsible for any of the interesting novelties or improvements described in these columns.



Noon Hour Talks by the Boss Carpenter

Talk No. 64.—Farm Series No. 5—Implement Sheds

THE BOSS TELLS ABOUT THE NEED OF HOUSING FARM TOOLS AND SHOWS HOW TO BUILD TWO TYPES OF IMPLEMENT SHEDS

"THE other day," said the Boss, "I had a call from a young farmer who lives a few miles out from town. He is a progressive young fellow and tries to run his farm on a business basis, and not on the principle that 'what gave grandfather a living ought to be good enough for me.' As fast as he can get the money together, he is improving his place with new buildings where they are needed, and repairing the old ones to lengthen their time of service.

"This farmer has been interested in our talks on farm buildings and he came to me with a proposition that he thought needed immediate attention.

"'You know, Boss,' he said, 'I saw the statement the other day that over fifty million dollars is lost every year on American farms because implements and machinery are not properly housed. Now, I have invested about one thousand dollars in farm tools and machinery of various kinds, and have no place

I want to drive thru the barn or granary. One of my neighbors thought that he could leave his tractor outside last year, but he found that the damage done by one winter's exposure was enough to pay the cost of some simple structure which would house it, together with other farm implements. What can you do for me in such a case?'

"We went into the matter," said the Boss, "and found that the census figures showed that the average investment per farm in farm machinery was about two hundred dollars. But since these figures are based upon all sorts of farms, it was estimated that a fairer basis for our figures would be about one thousand dollars for the average farm belonging to a progressive farmer. While some instances show that a given machine will last for twenty years with one man, the same machine left out in the field where he quit work the year before, would last another man only five years. A conservative value for the life of a farm machine or implement might be taken as ten years.

"Owing to the fact that most good farm machinery is well built, it is reasonable to figure that the life of this machinery could be extended to fifteen years if

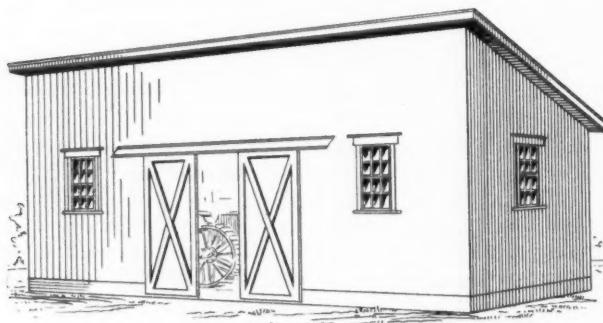


Fig. 5A. Exterior of Shed Type of Implement Shed.

to store this equipment except in driveways of my granary or barn, and in a few little sheds and out-buildings. I find that the larger machines are in the way and that I always want some tool that may be in any one of a dozen different places.

"I have ordered a small farm tractor for my spring work, and must have some place to put it under cover so that I will not have to run it out doors every time

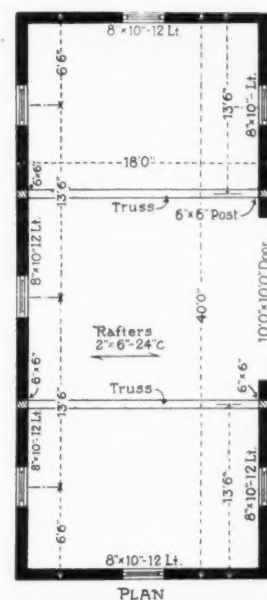


Fig. 5B. Plan View of Shed Type Building.

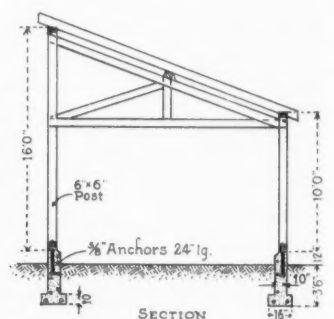


Fig. 5C. Section of Implement Shed Showing Trusses.

it is properly housed and kept in repair. Otherwise, the five-year period of usefulness is nearer correct.

"We finally figured out that he could build a good, serviceable implement shed for two hundred and fifty to three hundred dollars that would meet his needs, and that the saving that would result would really allow him to spend as much as eighteen hundred dollars and still break even over a period of time. But this expenditure was not necessary. He could see that his simple implement shed would pay for itself in two or three years when he considered the losses of some of his neighbors who left their machinery and tools outside or in places where the rain, snow and sun could get at them.

"This man could see that he was adding to his property, and providing a place where all of his equipment could be collected under one roof where he could find it on short notice. He would have a building in which machine repairs could be made easily, and a dry, sheltered space for newly painted or well greased implements which would be ready for the work of the coming season.

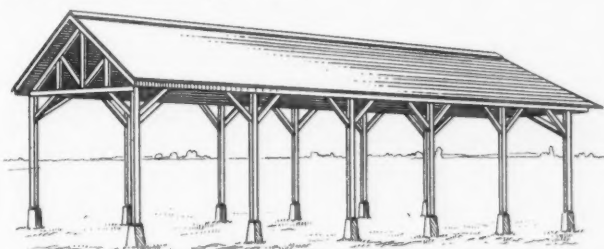


Fig. 5D. Exterior of Open Type Implement Shed.

"The two common kinds of implement sheds which we considered were the 'open shed' type and the 'simple shed' type. The open shed type will do where the exposure to rain and snow is not great, but the closed, simple shed type makes the better building. The open shed is the cheaper building, but the closed shed gives greater protection to the tools and machines and will pay for itself in the end.

"In choosing a design for a shed you must balance low cost with serviceability. In other words, the building must fit the machinery that is to go into it and should allow easy access to the machines. Strength is not the main consideration in such a structure, as the only loads it has to carry are those due to snow and wind pressure. For this reason, the framing may be light, thus allowing a cheap and economical building.

"The general layout of the floor space will depend upon the size and number of machines to be stored. Machines which are to be used frequently should be placed so that they can be taken out of the shed without moving other equipment. Small tools and machines can often be stored under the projecting parts of larger machines. Experience has shown that sheds either 18 feet or 26 feet wide are the most serviceable since they are adapted to the size of various tools and equipment. Interior posts should be avoided if possible, as they are in the way when machines are

to be moved. A simple type of roof truss will accomplish this purpose.

"In order to obtain an idea of the floor space needed in a given case, the following table may be used:

Floor Space and Height of Space Required to House Common Farm Implements

Implements—	Floor Space in Feet	Height of Space in Feet
Plows—		
Walking	8x3	3
Sulky and horse gang (tongue off; add 10 ft. for tongue).....	8x6	4
Engine gang	16x7	5
Harrow—		
Spike tooth, per section.....	5x5	2
Spring tooth, per section.....	5x4	1½
Single disc, 8 ft. with truck (tongue off) ..	6x9	4
Double disc, 7 ft. with truck (tongue off) ..	8x8	4
Weeder—		
(Thills on)	13x8	4
Grain Drills—		
12x7 (tongue off; add 10 ft. for tongue) ..	5x8	5
16x7 with press attachment (tongue off) ..	7x11	5
Rollers—		
Smooth	3x10	4½
Corrugated, single (tongue off; add 10 ft. for tongue)	3x10	4
Corrugated, double	4x8	4
Corn Planter—		
Two row (tongue off; add 10 ft. for tongue)	5½x6	3½
Cultivators—		
Walking, one horse.....	7x2	3½
Riding, single row (tongue off; add 10 ft. for tongue)	8x5	4
Riding, two row (tongue off; add 10 ft. for tongue)	8x10	4
Alfalfa (tongue off; add 10 ft. for tongue) ..	7x6	5
Mower—		
6 ft. (tongue off; add 10 ft. for tongue) ..	5x6	7
Binders—		
Grain, 8 ft. (tongue truck off).....	8x14	7
Grain, 6 ft. (tongue truck off).....	8x12	7
Corn (tongue off; add 11 ft. for tongue) ..	13x6	7
Hay Rakes—		
Self-dump (thills off).....	5½x11½	5
Side-delivery (tongue off; add 10 ft. for tongue)	13x9	5
Tedders—		
Kicker (tongue off; add 8 ft. for tongue) ..	5½x8	5
Combination (see side-delivery rakes).....		
Hay Loader	14x9½	9
Ensilage Cutter, 20-ton (tongue off)	11x5½	7
Corn Shredder, 8 roll.....	20x8	9
Corn Sheller	20x8	11
Hay Press	16x6	6
Grain Separator, 32-inch.....	26x8	8½
Clover Huller	24x8	8
Gasoline Tractor, 20-4 H. P.....	15x9	9
Gasoline Tractor, 10-20 H. P.....	12x8	8
Portable Engine, 6 H. P.....	9x5	6
Fanning Mill, 24-inch.....	4x3½	5
Wagons—		
Farm gear (tongue off; add 10 ft. for tongue)	11x5½	4
Wagon with box and top (tongue off).....	11x5½	5½
Wagon with box and tip top (tongue off) ..	11x5½	6½
Wagon with hay rack (tongue off)	16x7½	5
Buggies—		
One seated (thills up).....	8x5½	7
Two seated (tongue off).....	10x5½	8
Grain Dump (knocked down).....	12x4	4
Potato Machinery—		
Planter (tongue off; add 9 ft. for tongue) ..	5x3	4
Sprayer, two wheeled barrel (thills off) ..	6x6	5
Digger, wheeled, elevator (tongue off)	13x4	3
Automobiles—		
Small	11x6	7
Large	14x7	8
Phosphorus Distributor, 1,000 lbs. (tongue off; add 10 ft. for tongue).....	4x10	4
Manure Spreader, 50 bu. (tongue off; add 10 ft. for tongue).....	17x7	6

(Continued to page 128.)

Roofing for Generations to Come

By Frank S. Fogg

HOW many appreciate the important part the roofing slate industry plays in the industrial world? When one considers that the roof covering of any building is of the greatest importance, we wonder where all of the material comes from. Upon the roof depends not only the durability and

ural condition, and that is slate. Had you ever thought of that? Slate is taken from the ground, from the quarries, in large blocks, quarried from solid living rock, from 200 to 300 feet below the earth's surface, pure, just as the all-wise Creator planned, and is split into the proper thickness and trimmed to the various sizes, but the substance of the rock never changes. It is the same well known slate rock that cannot absorb anything, and therefore cannot decay. Manufactured slate, at the quarries, is left out in the open, subject to the elements. There is no "wear out" to a slate roof.

As far back as the fourteenth century slate was largely used as a roof covering in England, Wales, Ireland, Scotland, Spain and France. Many of these very same slate are in use today, having been relaid and used a second and third time.

In our country the three largest producing states of slate are Pennsylvania, Vermont and Maine. Marvin, in his history of Bennington, Vermont, says that slate was quarried in that town in the years 1750-1753.

In 1905 ancient tombs were discovered and opened in England. From the flint implements, pottery, etc., found, some were considered to date back about 1500 years. The tombs in question were composed of slate rock and undoubtedly came from Wales.

preservation of the entire structure, but the safety of the contents and the comfort and health of the occupants.

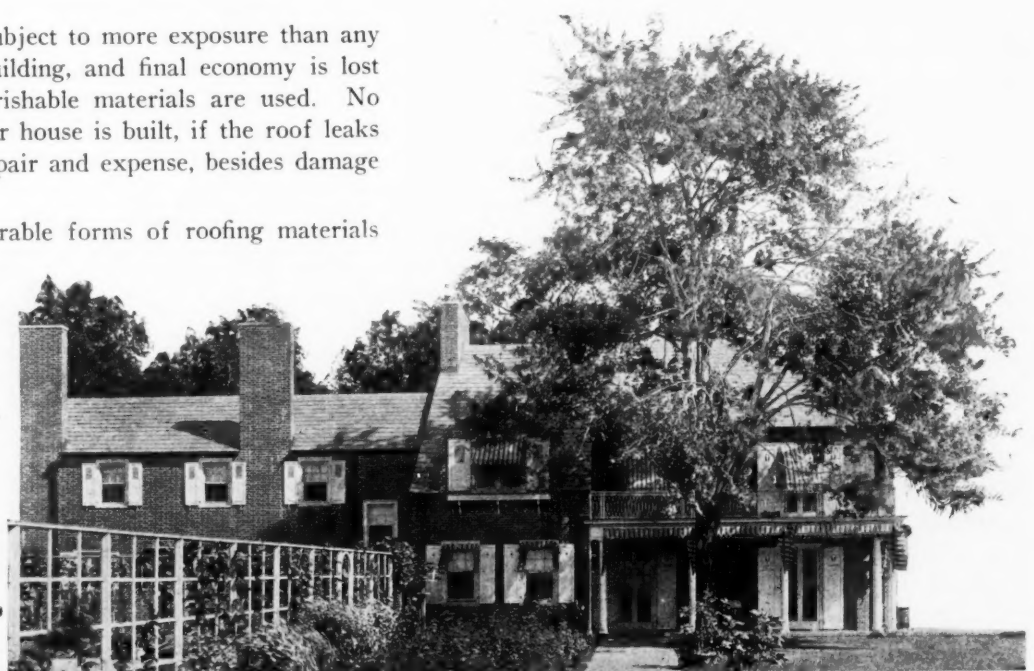
It is necessarily subject to more exposure than any other part of the building, and final economy is lost when cheap and perishable materials are used. No matter how well your house is built, if the roof leaks it causes constant repair and expense, besides damage and annoyance.

There are innumerable forms of roofing materials made by man, such as tin, corrugated iron and almost endless varieties of composition roofings, such as tar, asphalt, asbestos and felt, all manufactured thru more or less elaborate processes.

There is only one kind of roofing made by nature, and used in its nat-



J. E. Aldred's Gate Lodge, Locust Valley, L. I. This is rather a pretty little bit, showing what can be done with slate on a small roof. The slate is being shipped for the country house now being erected by Mr. Aldred on this estate. Bertram Grosvenor Goodhue, architect.



Residence Miss E. A. Watson, White Plains, N. Y. Architects, Delano & Aldrich. Another example of effective roof treatment.



Slate Floor. Chapel of the Intercession. Architect, Bertram Grosvenor Goodhue. Slate is being largely used for these better-class buildings. The charm of the old cathedral lies not alone in its architecture. Time has added a phantom touch of something intangible, inexplicable, fascinating. Our American slate floors are veritable counterparts of those of the cathedrals of the Old World, a remarkable feature being the suggestion of age. These floors are also used for porches, loggias, etc.

This evidently shows that our forefathers built for years of tomorrows. They built "for the generations to come," for their children's children. They built homes, and a home, to be a home, must have a permanency that will endure the buffets of time—that will weather the storms of ages. Beautifully, wisely and economically our forefathers built. The wonderful colonial homes of New England are a heritage of their wisdom. Practically untouched by time's ravages, they stand as a monument to building foresight, to a wise choice of materials, to the permanency and to the beauty of slate roofs. Year after year it stands unaffected by excessive heat or icy cold. Rain cannot mar it. It defies wind and laughs at flying hot sparks. For what fire is hot enough to burn solid rock? Recent tests made show that before slate would begin to discolor they would stand a heat of 1,800 degrees, and before they would crack stood a heat of 2,900 degrees. Very few can comprehend what this means.

One of the most valuable assets or talking points favorable to slate is the wonderful weathering effect developing into soft, rich and mellow shades of grays, russets, purple and greens.

Artists, students of colorings and chemists have spent considerable time in trying to equal the won-

derful combinations of the weathering effect. It emphasizes, more and more effectively, the fact that Nature has planned well for slate. Whether a building is a costly mansion of brick, stone or wood, or an artistic bungalow, or a more modest dwelling, no matter what color of paint is used on the structure, the weathering effect of slate harmonizes beautifully with the color scheme of the structure.

The owners of some of the quaint, artistic, unusual and beautiful homes and chateaus in England, France, Spain, Scotland, Ireland and Wales take much pride in pointing to the age and beauty of their roofs, all made possible by the weathering effect. The producers of slate make it possible for the builders of churches, colleges, public schools, office buildings, railroad stations, factories and residences here in America to have equally as beautiful and everlasting roofs as our friends and neighbors in Europe. We can give you the same "English," "French," "Spanish" or "Welsh" effect.



BUILDING for permanence is a good rule for everybody, whether on the road or off.



LIFE is one chuck hole after another for the farmer on a bad road.



Reinforcing Masonry

THE STRESSES THAT STRUCTURAL MEMBERS HAVE TO WITHSTAND—FACTORS OF SAFETY

By M. L. King

MASONRY beams and floor slabs have for years been built with the most economical combination of proportions of masonry and steel. The science of designing has been highly developed; but unfortunately for the building public, walls, especially brick and block walls, have been built in accordance with time honored custom. They have been stiffened by the use of some more brick or blocks.

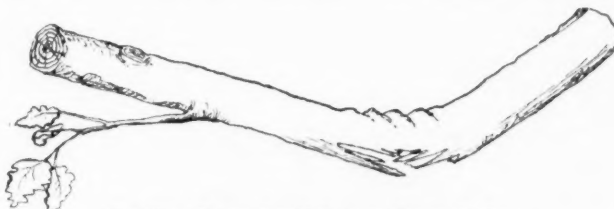
The logical thing to do is to use masonry thick enough to support the load coming upon it, then any additional stiffness of wall necessary to withstand wind or side pressure of any kind should be provided by means of steel laid in the mortar joints or in rare cases, it may be necessary to place steel within the blocks and fill them with concrete.

In bending any material or substance there exists only three kinds of forces acting upon the material. If these three kinds of forces are thoroly understood and properly resisted, the structure will not fail.

While it is possible to go into the whys and wherefores far enough to befuddle any of us, we can think of them in a simple way, and figure them simply. In

this way each man can take care of the problems that come up in the minor buildings and will be in a position to understand and intelligently execute any work on large buildings.

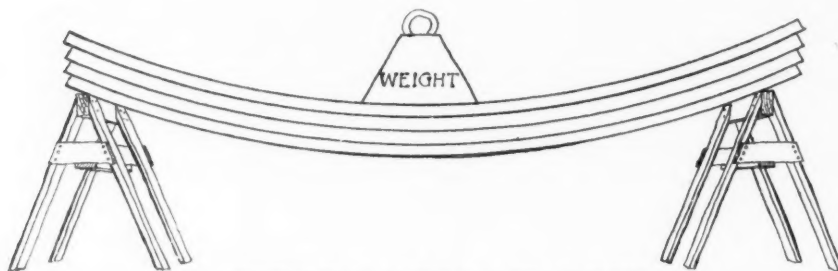
The three forces, or stresses as we often say, are compression, tension and shear. The first is a force tending to crush the material. The tension stress is



Bending Force Applied to a Green Twig.

a force tending to pull material apart or to elongate it. Shear is the force tending to move one portion of the material sidewise on another portion. For instance, in a floor slab we can see where it would be possible for a portion of the floor to drop thru.

These forces combined in bending are illustrated very nicely in the bending of a green twig. If you are not already acquainted with these forces, take a green twig as large as you can bend handily and bend it. As shown in the illustration, you will notice on the outer part of the curve there is a tensile force or stress occurring and the bark actually pulls apart. It gives or, technically, it is strained. On the inner side, that is, the side at which you have applied the central force, the bark compresses



Bending Force Applied to a Pile of Boards.

or crinkles up. That is, shortens, due to a compressive force.

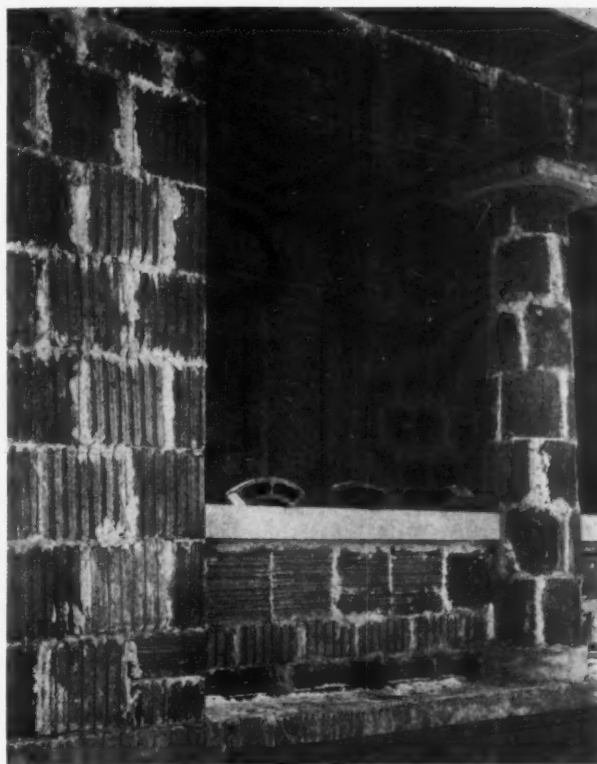
Sometimes, if you will bend a stick near the end, it will split out because the outer part of the curve is pulling and the inner side is pushing, and if the two sides are not knit together rigidly it will split and the portion of the twig on the inner part of the curve will at the end project beyond the portion of the twig, that is, on the outer part of the curve. Thus, the material has failed in shear.

You have undoubtedly seen the same forces at work in handling lumber. We will suppose there are four boards lying on top of a pile, perfectly flush at each end. If a man at each end picks them up, they will sag in the middle and the ends of the top board will stick out past the first one below it and it will stick out past the next one below it.

If they had all been nailed or glued together in order that they could resist shearing forces, they would have bent very much less and the ends would have remained flush. Any bending that would have occurred would have been due to compression which naturally shortened the upper board and tension which actually lengthened the lower boards.

The next question is to know, under various circumstances, how strong are the forces at work on a beam or a floor slab, how strong our material is, that is, what ability it has to withstand these various forces. Naturally we can know this in a general way by testing but we cannot know exactly in every case how strong material is or exactly what the wall or floor slab will be called upon to withstand. All we can do is to deal with averages. Then build several times stronger in order to avoid danger.

The amount by which we increase this strength over and above these requirements is our factor of safety or as it has been very aptly called our "factor of ignorance."



Detail of Round Tile Porch Column.

The convenient way of using the factor of safety is to think of the strength of any building material in two ways. One is its ultimate strength, that is the force which would be required to actually cause that material to fail in a testing machine, and the other figures which we should bear in mind is the safe strength of that material.

In the case of masonry we generally use a factor of safety of 6 to 10, depending upon the material and to what use it is put, also what the result would be in the case of failure. For example, you would use a high factor of safety (low safe strength), where life would be sacrificed by failure and a comparatively low factor of safety where only a moderate amount of property would be lost by failure.

In any case, it should be borne in mind that a building is built to stand, otherwise it is a loss to the owner and no credit to the builder or the material. But there is no such thing as absolute security against failure.

Elasticity is the property of material which enables it when compressed or stretched or bent to return to its original shape when the force is removed.

If the material is perfectly elastic

(Continued to page 128.)



Hollow Tile Residence Before the Stucco Finishing Coat Is Put On.



Model Home Designs

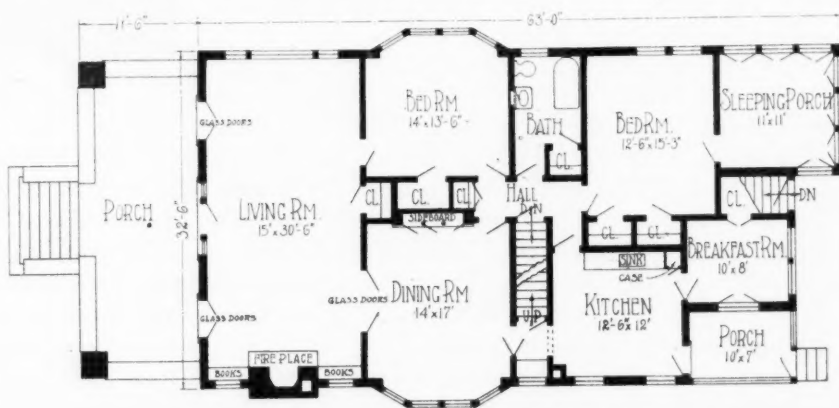
Bungalow with Ashlar Masonry Walls

The bungalow shown in perspective below is the home of B. M. Houchens, of Independence, Missouri. It was designed by Clifton B. Sloan, architect, of Kansas City, Missouri. The exterior walls are finished with stone with the exception of the bays, which are finished with stucco. The massive appearance is very well fitted to the type of design which is used and the details of ornamentation about the porch and roof are all appropriately chosen. There is a balcony above the front porch and the front main wall of the house is carried above this balcony to a gable. The cornice detail of the main roof is carried continuously around the balcony and this detail is repeated for the cornice of the hip roof dormers.

At the rear of the large living room, which is extended entirely across the front of the house, a set of two walls

separate the dining room and kitchen from the two bedrooms and bath. Beyond these rooms, at the rear, there are a sleeping porch, breakfast room and rear porch. The space between the two dividing walls is utilized for closets and a small hall near the bathroom.

The living room and dining room are finished in oak, following the English style. The bedrooms, bath and hall are finished with white enamel. Floors are of oak. The attic is well lighted and has been finished so that it is useful for a variety of purposes.



Floor Plan of Bungalow Shown Below. Size, 63 Feet by 32 Feet 6 Inches.



Residence of B. M. Houchens, of Independence, Missouri, Having Exterior Walls of Ashlar Masonry. The Building is Well Balanced and Attractive. Clifton B. Sloan, Architect.

Shingle Sided House with Brick Porch

The house shown in the accompanying perspective and floor plan is an inexpensive structure which is well arranged for the comfort and convenience of the occupants. The exterior is simple but attractive. The walls of the building are finished with shingles up to the cornice line and with stucco on the end gables. The porch gable is finished with shingles.

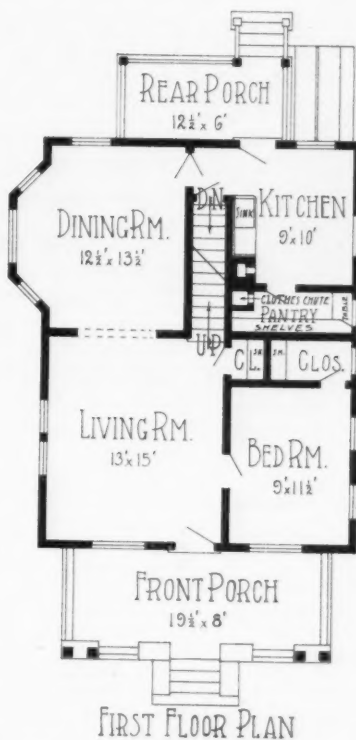
The porch design is simple, consisting of four brick piers with connecting walls carried only up to floor level, balustrades of brick and railings of simple wood frame. The porch roof is supported only by the outside piers, upon which are mounted double square columns with ornamental caps. A generous overhang is provided for the roof, which has a pleasing effect on the appearance of the building.

Entrance from the front porch is into the living room, which is a room 13 feet by 15 feet placed in one of the forward corners of the building. A large cased opening leads back from the living room into the dining room. There is a three-window bay in the dining room which contributes very largely to the pleasant aspect of this room. A double-acting door is placed in the interior wall between dining room and kitchen. The basement stairs are entered from the short hall between these rooms. A large pantry is provided which is fitted with

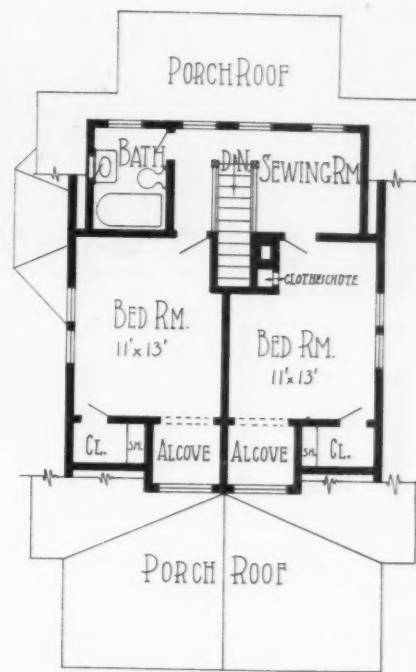
shelves and a table. A clothes chute is available from the pantry.

There is one bedroom on the first floor, this room being entered from the living room and terminates in a passage between the sewing room and the bath

on the second floor. There are two bedrooms on this floor, arranged in a symmetrical manner about the central wall. Each has a large closet and an alcove having a large window in the forward wall.



FIRST FLOOR PLAN



SECOND FLOOR PLAN

Floor Plans of House Design Shown Below in Perspective. Size, 23 Feet 6 Inches by 43 Feet.



Seven-Room Bungalow Finished With Shingles. Porch Piers and Walls Are of Brick and Porch Floor is of Concrete. The Gable Roof Has Been Used to Advantage in This Design.

High Grade Poultry House

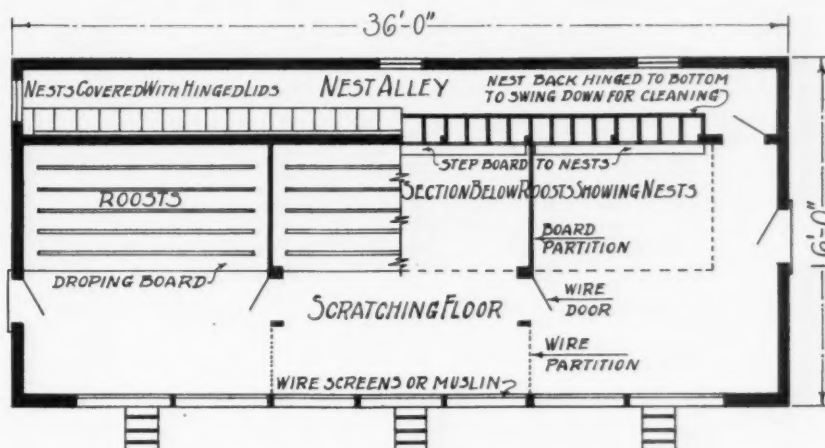
The poultry house shown in the illustrations on this page is a good example of high grade modern poultry house design. It is a building 36 feet by 16 feet of the saw tooth roof type, of frame construction above a concrete foundation. The building is designed to face south which provides plenty of sunlight in the farthest corner of the building on a bright day. The front wall is practically all given over to ventilating screens of either fine wire mesh or muslin.

The interior of the house is divided into three parts, care being taken not to interfere with the ventilation in any way by this division. The arrangement of furniture in these three parts is practically the same. A generous size scratching floor is provided at the front, then the roosts and the nests along the rear next to the alley. The dividing partitions are built of boards from the rear wall to the forward end of the roosts. A wire screen door is placed in each of the partitions at this point and the partition is carried on from the door to the forward wall with wire cloth.

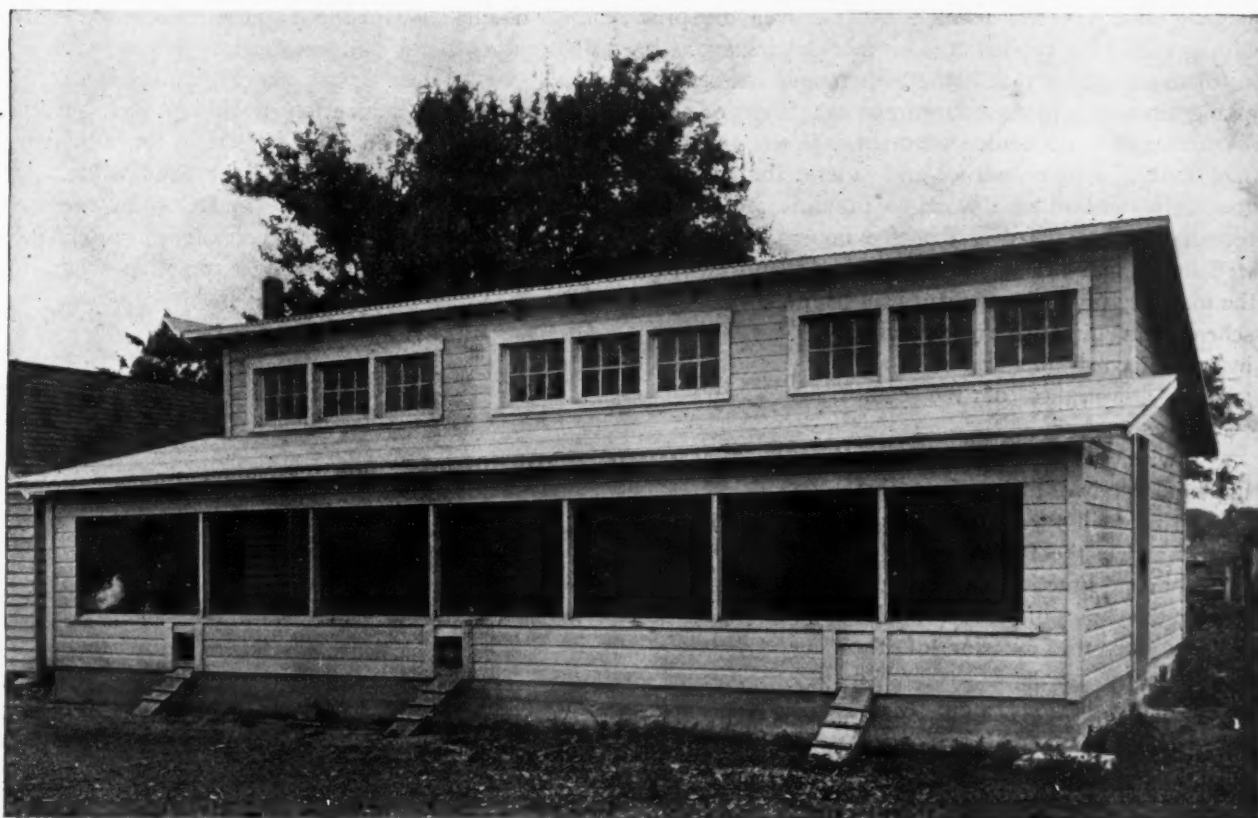
so that the nest will be easily cleaned from the nest alley. The tops of the nests are also fitted with hinged lids. All of the furniture is removable for cleaning. This is a necessity in all poultry houses because if the entire inside of the building is not given a thorough cleaning at frequent intervals there is certain to be trouble from insects and other sources. Some of the old-time poultry houses were allowed to

all natural means of purification—ventilation and sunshine.

Some poultrymen believe that it pays to spend the money to seal up the inside of the poultry house with wall board, closing all of the cracks and finally applying two or three coats of thin paint to fill the pores of the board. This is perhaps more than the average man cares to do in finishing his poultry house, but it is still true that money spent in



Plan of Poultry House Shown in Perspective Below.



Modern High Grade Poultry House of the Saw-Tooth Roof Type. This Building Is Thoroughly Built According to the Latest Ideas of Poultry House Design, and Its Interior Arrangement Is Excellent.

The poultry house may be entered from either end, but the nest alley is connected with the front part of the house at one end only. Each nest is built with its back hinged at the bottom

get in terrible condition chiefly because they were hard to clean. The modern poultry house is built in such a manner that it is as easy to clean as possible and in addition, advantage is taken of

careful construction to prevent draughts and in making the sanitary conditions up to standard of the modern type, is money well spent. This poultry house presents a particularly good appearance.



Painting the Exterior

WHAT IS PROPER AND BEST IN COLOR SCHEMES AND IN EXTERIOR PAINTING METHODS

By Ralph G. Waring

Specification Engineer

NOTE: This is the fifth of a series of articles by Mr. Waring. The sixth will appear in an early issue.

A RECENT motor trip was a source of great pleasure to the writer. Constantly on the alert for new ideas, new practices or improved methods I noticed with increasing satisfaction the immense difference in the choice of exterior color schemes evident on the newly painted houses, over the prevailing colors as applied five or more years ago. It is fortunate indeed that home owners and renters are taking advantage of the educational campaigns of such magazines as the *AMERICAN BUILDER*, *House and Garden*, *Ladies' Home Journal* and others, for nowhere are the results of such work so prominent as in the recently constructed or remodeled houses. It speaks well for community interests and improvements when the majority of the houses are well painted, with color schemes in direct harmony with individual conditions and with the general appearance of the community as a whole.

It is with the intention of furthering this woodwork, therefore, that the writer will try to incorporate in this article the fundamentals of principle and practice which should govern the choice of a suitable color scheme for the exterior of the home.

Above all else, seek a quietly unobtrusive combination of color and arrangement. For those whose tastes run to somber shades and heavy colors, a result achieved thru the use of lighter tones will be immensely pleasing. A house built on an extensive plan, shaded by heavy trees, or closely crowded by neighboring houses, does not want to be painted in heavy, dark red

or green, as are so many of our older types of houses. Their owners adhere to the old color schemes of by-gone days when by the use of a newer, softer, lighter and infinitely more pleasing color scheme, surprisingly better results could be obtained. On the other hand, for those whose ideas tend towards bright colors of the extreme "canary yellow" and vermillion red groups, let me suggest that you adopt a different color combination avoiding such striking colors and use instead some scheme in tones of ivory, tan and brown or silver gray, ivory and white.

The house on a hill in the midst of an extensive lawn should not be an expression of benign opulence, but should appear as a quietly expressive suggestion

(Continued to page 140.)



AN ATTRACTIVE REAL ESTATE OFFICE.

It is naturally desirable that a real estate "tract" office attract attention, that it in some way be made more or less conspicuous. The one here shown meets this requirement at least, and in a most pleasing manner. It is located at Los Angeles, Cal., in a real estate company's subdivision that is restricted to fashionable residences.

As will be evident from the illustration, the office is a rather striking interpretation of Japanese architecture. Its walls are constructed of face brick, vertically timbered in interesting fashion, and the roof, with the true Japanese grace and curves, is covered with red roofing tile, while extending outward from the walls on all sides on line with the top of the windows and door is an enhancing framework of sawed beams. The brick work is of light creamy buff tone, and the exterior work is painted a deep shade of green.—C. A. Byers.



"The man who put up our garage for us did a mighty good job and everything is working perfectly after three years of the hardest kind of service. I'll want that same man to do the work on the new house I'm considering."

That's the way the owner talks when the builder has used



Designed especially for garage construction

When you use
STANLEY Garage Hardware

1. The hinges are strong and good looking and the doors close snugly and weather tight. They don't sag or warp, and are always easy to operate.
2. The bolts lock smoothly and securely.
3. The latches and pulls work smoothly and don't get out of order.
4. Stanley Garage Door Holder No. 1774 holds the doors open preventing them from being accidentally blown against the car entering or leaving the garage.

Dealers:—Stanley Garage Hardware is now carried in stock by all the leading hardware jobbers. Your wholesaler can supply you. Ask us for valuable selling helps.

You ought to be thoroughly familiar with STANLEY Garage Hardware. Write for latest catalog free on request.

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Lasting Newness

Of course you turn every building you construct over to architect and owner spick and span and you want it to remain in that condition. If you see that your painters use Murphy Varnish you can always feel sure that you have given your work a finish that will "stand up" for the longest possible time no matter what treatment it receives after it leaves your supervision.

Murphy Varnish

"the varnish that lasts longest"

Architects and owners may sometimes seem indifferent as to what varnish you make your painters use. But no one can be indifferent to the service that Murphy Varnish gives and the beauty of the finish that it produces.

Our country-wide advertising is constantly familiarizing every one with the facts about varnish—the plain *unvarnished* facts. Builders who do high grade work are sure to benefit from it.

Send for further information about our many products.

Murphy Varnish Company

Franklin Murphy, jr., President

Newark :: :: Chicago

Dougall Varnish Company, Ltd., Montreal
Canadian Associate

Correspondence Department

Our Readers are Requested and Urged to Make Free Use of These Columns for the Discussion of all Questions of Interest to Carpenters and Builders

A Special Call for Skilled Mechanics

WAR DEPARTMENT
Office of the Chief of Ordnance
Washington

Washington, October 15, 1917.

Editor AMERICAN BUILDER MAGAZINE,
Chicago, Ill.

Sir: I am directed by the Chief of Ordnance to invite your co-operation in the work of bringing to full strength the necessary quota of men for the Enlisted Ordnance Corps of the National Army. Skilled men in a great many different lines of trade are urgently needed at this time. Speaking, as you do, authoritatively in your position as editor, to the most representative and progressive elements in the trade you represent, you can be of tremendous assistance to the Government in this time of National pulling together. Unless the man in the front line trenches has the help and skilled co-operation of specialists behind him, his work is seriously hampered. Then, too, it is to the best interest of the nation that each man does the work for which he is best fitted, thus saving the Government a long period of instruction, and also greatly increasing his own chances for advancement in rank.

We enclose with this letter a brief resume of the work, and general information about the Enlisted Ordnance Corps of the National Army, with the request that in the earliest available issue of your valued publication you make announcement concerning it, with special reference to the men in the particular line of trade your publication represents.

A great many men who are experts in their lines will wish to make a sacrifice for the Government and take less pay to become non-commissioned officers in the Ordnance Corps of the National Army. The Ordnance Corps has been called "The Army Behind the Army."

By bringing the facts in this letter and the appended circular to the attention of your subscribers, you will be serving the best interests of your subscribers, and at the same time will be of great service to the Government.

Very sincerely yours,

F. A. ROGERS,
Captain Ordnance Department, U. S.

Information to Applicants for Enlisted Ordnance Corps WHAT IT IS

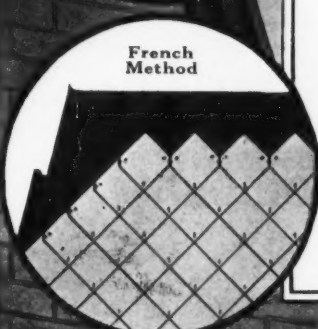
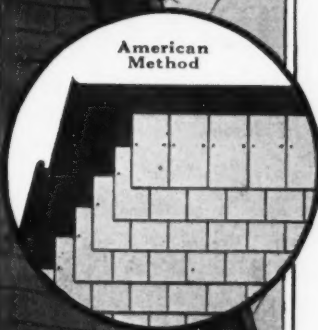
The Enlisted Ordnance Corps, National Army, into which the Ordnance Enlisted Reserve Corps has been merged, is charged with the supply, maintenance and repair of all cannon and artillery vehicles and equipment; all machines for the service and maneuver of artillery; all small arms, ammunition, harness, motor trucks, motorcycles, tractors and railroad cars; in fact, it is the Army behind the Army commonly known as "Service of the Rear."

Type of Men Wanted

There is a place for practically every man who knows a trade in the Enlisted Ordnance Corps. Machinists, mechanics, plumbers, painters, carpenters, canvas workers,

(Continued to page 96.)

Give that roof a new start in life.



When a roof starts to go wrong and requires constant patching and repairs it is really more economical to rip it off and put on a new one because that will have to be done eventually anyway.

If you put on

AMBLER Asbestos Shingles

you will have a roof that will last as long as the foundation; that will never require painting or repair. And best of all it is weather-proof and fire-proof.

AMBLER ASBESTOS SHINGLES are made in three colors: Newport Gray, India Red or Blue-Black.

Write us for the full story, with pictures of the beautiful buildings roofed with Ambler Asbestos Shingles. Estimates gladly furnished free on request.

Keasbey & Mattison Company

Dept. B-1, ABLER, PA., U. S. A.

Manufacturers of Ambler Asbestos Shingles, Asbestos Corrugated Roofing and Siding, 85% Magnesia Pipe and Boiler Covering and Asbestos Building Lumber.

(Continued from page 94.)

auto mechanics, saddlers, blacksmiths and wheelwrights are especially needed at this time.

Applicants must be between eighteen and forty years, citizens or declarants, and be able to speak, read and write the English language, should have no absolute dependents, and must be able to pass a physical examination conforming to that prescribed for the Regular Army.

Place and Type of Service

If accepted for enlistment, men will ordinarily be sent to an arsenal school for a period of instruction, on completion of which they will be assigned to detachments, units or organizations, with ultimate service abroad. Previous military training, while preferable, is not essential, as men will continue the work which they pursue in civil life.

Pay and Grade

In view of the importance of their work a large number of men will serve as non-commissioned officers. Original enlistment is required as private, but later courses of training or special qualifications quickly lead to higher grades. Pay ranges from \$30 to \$97.20 a month, depending upon demonstrated ability and place of service. Men enlist for duration of war only.

Free quarters, rations, clothing, bedding, medical attendance, etc., are provided.

Relation to the Draft

Men registered under the Selective Service Law may voluntarily enlist prior to the posting of their names by their Local Boards. No man who has been called to appear for physical examination is eligible for enlistment in any

branch of the military service. In case such men do enlist the department under which they have enlisted will be requested to discharge them and direct them to report to their local boards.

How to Enlist

Get application blank by writing to Chief of Ordnance, Enlisted Personnel Division, Washington, D. C. Fill it out, return to Chief of Ordnance, and if there is an opening for you at the time, authorization will be sent you to enlist at the nearest recruiting station, and if accepted there, free transportation will be provided to place of service.



Converting a Common Wash Stand Into a Modern Dressing Table

To the Editor:

Bernardsville, N. J.

When one considers the number of old-fashioned wash stands there are stored in attics, basements and other out of the way places serving no other purpose than to hold various odds and ends, commonly known as "junk," it seems imperative that some practical use should bring them back into service again.

The day has passed when "no bedroom is complete without a washstand"—and yet we have them on our hands and they are too good to destroy.

Why not convert them into dressing tables? These have certainly become popular within the last few years. It would be difficult to purchase a dressing table today that would match a bedroom suite bought in the time of washstands; but we are still using these suites.

Now get that washstand out and look it over. They are

(Continued to page 98.)

"The principle of fire protection should be first applied to construction."

—National Board of Fire Underwriters Committee on Fire Protection.

Why build to burn when both service and absolute security are embodied in fireproof, serviceable and dependable metal roofings? KEYSTONE COPPER STEEL raises the durability standard for metal roofs and all exposed sheet metal work.

Actual time and weather tests have demonstrated the added durability and remarkable resistance to rust of Keystone Copper Steel.



Every architect and builder should have our booklets describing Copper Steel Black and Galvanized Sheets and Roofing Tin Plates.

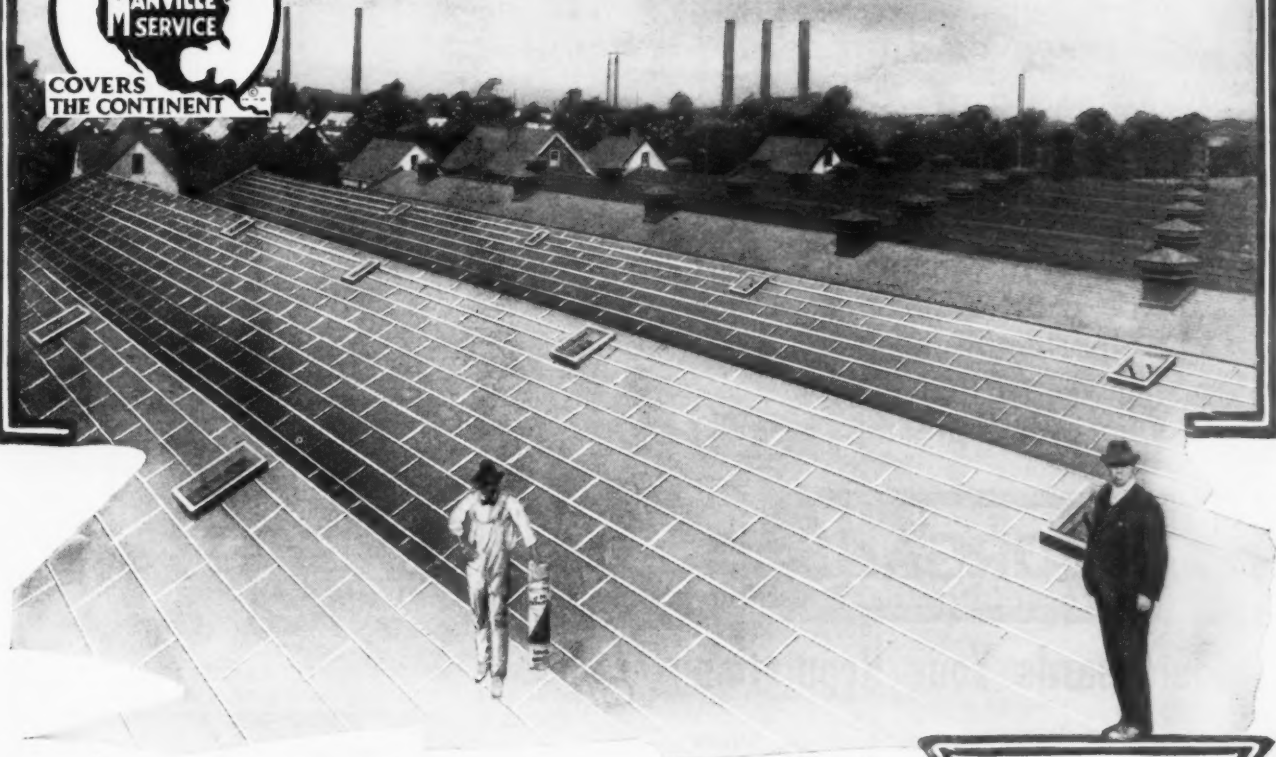
American Sheet and Tin Plate Company

General Offices: Frick Building, Pittsburgh, Pa.

DISTRICT SALES OFFICES:

Chicago Cincinnati Denver Detroit New Orleans New York Philadelphia Pittsburgh St. Louis
Export Representatives: UNITED STATES STEEL PRODUCTS COMPANY, New York City
Pacific Coast Representatives: UNITED STATES STEEL PRODUCTS COMPANY, San Francisco, Los Angeles, Portland, Seattle

JOHNS-MANVILLE ASBESTOS ROOFING



THE all mineral roof—made of asbestos rock—caps the permanent building. Flexible felts or artistic shingles—both are Johns-Manville Asbestos Roofings.

They are fire-repellent, protecting your customers' property against roof-communicated fires and providing against the day when public opinion will force legislation demanding a fire-retardant roof on all buildings. They are waterproof, practically immune from the attacks of time and need no periodic painting or coating.

Johns-Manville Roofing Responsibility

protects the user of this roofing through an exclusive system of registration. When you register your roofing, it is our obligation to see that it gives service as promised.

H. W. JOHNS-MANVILLE CO.
NEW YORK CITY

10 Factories—Branches in 54 Large Cities

Dealers find the Johns-Manville line a good one to tie up with, because it's easy to sell and profitable to handle.

Easy to sell, because the selling helps we furnish to our dealers are the kind that bring results. Profitable, because you make two profits—one on the sale and one on the laying.

Details of our attractive dealer plan sent on request to interested builders.

Morgan Storm Doors and Storm Sash

A Source of Immediate Business and Profit for Progressive Contractors

There never was a season that offered the wide-awake contractor greater possibilities for storm protection business. Coal was never so high—people are saving every possible penny.



Safeguards Your Reputation

All MORGAN Combination Storm and Screen Doors and Storm Sash are made of selected, well-seasoned materials. While they are built primarily for service, they are made in a variety of attractive designs.

Because they are made with the same thoroughness and care as has always characterized MORGAN Products—you can recommend MORGAN Storm Protection and be sure that there will be no "come-backs" or dissatisfaction. The MORGAN Guarantee insures your reputation.

*Write now for full particulars
and a copy of our Special Booklet
"Cold Weather Protection"*

Morgan Sash & Door Company

Dept C-78 Chicago, U. S. A.

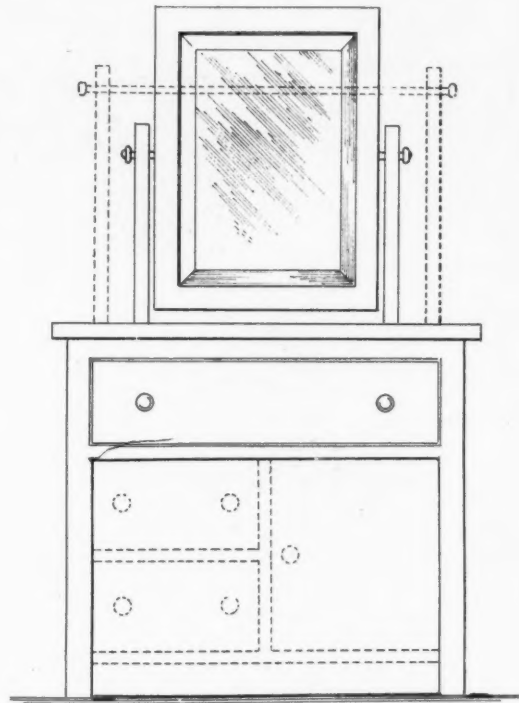
Morgan Co., Oshkosh, Wisconsin
Morgan Millwork Co., Baltimore

(Continued from page 96.)

almost all built on the same plan—one long drawer on top, below this two small drawers on the left side, a door on the right. The whole is surmounted by a towel rack.

Remove the door and drawers. Carefully remove the towel rack in one piece (we have a place for that later). Place the washstand on its back and remove all the partitions in the front except the one which supports the top drawer. This is to be done by sawing close to the corner posts.

Next measure from the top of the table to the bottom of the stretcher which was left in front. Measure off on the sides the same distance from the top and draw a line from the front to back. Saw along this line and then saw close



How to Turn an Old Commode or Wash Stand Into a Dressing Table.

to the corner posts from the bottom of the table up close to this line. Do the same thing to the back of the table.

In the case of washstands which have no corner posts to serve as legs for the dressing table, draw a line 2 inches from the corners—from the bottom up to the stretcher in front, and the same on the sides. Then saw along these lines. A better arrangement for a case like this would be to taper the legs, making them 1½ inches at the bottom and two inches at the stretcher.

The towel rack is our next problem. The upright pieces are to support the mirror. Saw off the horizontal rod, saw off the adjoining board 18 inches from the remaining upright which was removed. (If you already have a mirror, make the uprights close enough together to receive it.)

A pair of hinges to hold the mirror can be bought at any hardware store for a small sum. A small can of finish—stain or varnish, as the case may be—will be sufficient to touch up the unpainted surfaces.

R. HEIMROTH.



To Stormproof a Threshold

To the Editor:

Norwalk, Ohio.

I think I will tell you how I overcome my storm trouble with exposed outside doors. I make the thresholds and fit them and rabbet the outside of them down ¾ of an inch back ½ inch from the outside line of door, and then either

(Continued to page 100.)



The Saving in Modern Home Building

WHERE it formerly was deemed necessary to employ the rarest and most expensive woods to obtain richness and variety in the interior finish and trim of homes, the same effects may be had today with the use of the most plentiful and moderate priced wood, and with no sacrifice of permanent satisfaction.

Using modern stains, paints and enamels of standard quality, it is now possible to attain any desired effect of color or tone in home interiors, employing no other wood than

Southern Pine

"The Wood of Service"

Southern Pine has a wonderfully varied and beautiful grain and a satiny texture, lending itself perfectly to the use of stains. And it takes readily and holds permanently paints and enamels. Southern Pine is extremely durable, yet very workable; it is as perfectly manufactured as any of the expensive hardwoods, is obtainable anywhere east of the Rocky Mountains, **and it costs less than any other home building material of anything like the same high quality.**

If you have home building or remodeling in prospect, it will be well worth your while to send for the handsome new booklets, "The Interior of Your Home" and "Beauty Plus Service in Floors." Mailed gratis, on request, if you address
Department N-53



***Southern Pine
Association***
NEW ORLEANS, LA.



Perforated

Perforated

No. 150

BERT DE VRIES
CONTRACTOR AND BUILDER

ASHTON, IOWA.

PAY TO ORDER OF _____ \$ _____

DOLLARS

To ASHTON STATE BANK, (72-1181)
Ashton, Iowa.

Date

hours labor \$

No. 150

Amt. \$

BERT DE VRIES
CONTRACTOR & BUILDER
TIME CHECK

HOURS	
SUNDAY	
TUESDAY	
WEDNESDAY	
THURSDAY	
FRIDAY	
SATURDAY	
TOTAL HOURS	

Binding Edge

plow or cut a groove in the bottom of the door so the back of the groove will come $\frac{1}{8}$ inch in front of the back of rabbet, and I never hear of any further trouble.

A. D. HARTMAN.

A Cost System

To the Editor:

Ashton, Iowa.

Enclose find a sample of my weekly pay check which I find very satisfactory and may be interesting to the AMERICAN BUILDER readers.

BERT DE VRIES,

Contractor and Builder.

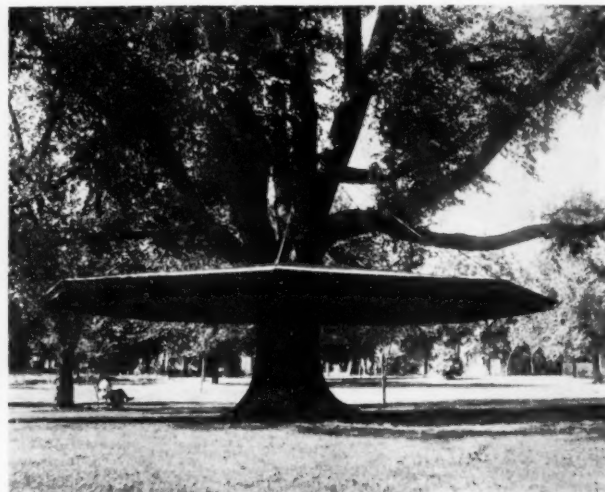
Novel Tree Shelter at Rockford

To the Editor:

Rockford, Ill.

I am enclosing a photo, which shows a style of shelter house erected in one of the playgrounds of the Rockford Park District. They are framed about the trunks of the trees and swung from above with rods, and covered with prepared roofing. Possibly more valuable as an ornament than anything else.

L. S. SWEENEY.



Tree Shelter in Rockford, Ill., Park.

NEW Buildings from OLD Ones

Keep busy all winter. Old frame buildings can be transformed into beautiful, modern, enduring buildings for a fraction of the cost of new lumber by



Overcoating with KELLASTONE

IMPERISHABLE STUCCO

Solves the high-cost-of-materials problem. Can be applied in zero weather. Cannot freeze because not mixed with water. Bonds perfectly with any wood, brick, concrete or tile. Write for booklet.

Fireproof, waterproof, coldproof,
Heatproof, strainproof, crackproof

NATIONAL KELLASTONE CO.
1330 Mallery Building, CHICAGO

Kellastone Composition Flooring
is Sanitary and Seamless



A WOODWORK OF MODERATE PRICE

which may be stained or enameled with the definite certainty that the finished surface will retain its lustre permanently.

Under enamel, the grain will not raise nor will the white or tinted surface become yellow or discolored.

Insist Upon Trade Marked

ARKANSAS SOFT PINE

At your local source of supply.

This symbol insures a close-grained, fine textured, non-resinous interior trim which will satisfy the most exacting client.

Authentic Painting and Finishing book; Samples and Architects Manual on request.

ARKANSAS SOFT PINE BUREAU

1235 Bank of Commerce Building
LITTLE ROCK, ARK.



"BEAUTIFUL BIRCH FOR BEAUTIFUL WOODWORK"

Business Good

Booming!

And all signs point to bigger business for fall and winter construction. The builder will have his day—"More power to his elbow."



America's Favorite Hardwood is slated for a generous share of the general prosperity.

Allow us to suggest as a sign of "good business" that you specify **birch** for interior trim, veneered doors and floors—when the plans are under discussion.

Such a selection is an indication of good taste as well as good business judgment on your part, for **birch** delivers the goods.



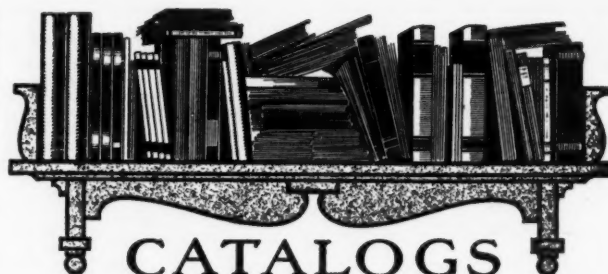
FREE Six little panels in six handsome finishes, with a common sense illustrated book. Write today.

The Northern Hemlock & Hardwood Manufacturers' Association

201 F. R. A. Bldg.

Oshkosh, Wis.

Good Business



CATALOGS BULLETINS & BOOKS RECEIVED

The following literature, dealing with subjects of interest to builders, is now being distributed:

Ideal Cincinnati batch mixers in various sizes, ranging between 5 and 14-foot capacity with a complete range of mountings from the little two-wheel mixer to the big traction paver are presented in a very interesting manner in Catalog No. 33, 34 pages, 8 by 11 inches, of the Ideal Concrete Machinery Company of Cincinnati, Ohio.

"**Clay Products for Building Construction**" is the title of a book of 32 pages, 8 by 11 inches, published by the Sewer Pipe Manufacturers' Association, Second National Building, Akron, Ohio. This book shows graphically why fire clay flue linings are necessary, presents standards for wall copings, sewer pipe and chimney tops and gives a great deal of useful information regarding specifications, building codes and ordinances.

Useful information for the architect, school board and contractor pertaining to natural slate blackboards is contained in a booklet of 20 pages, 3½ by 6 inches, published by the Natural Slate Blackboard Company of Pen Argyl, Pa.

"**Creo-Dipt**" Dixie White, a successful white shingle stain, is described and the method of its application explained in a folder issued by the Creo-Dipt Company, Inc., North Tonawanda, N. Y.

Tuec stationary cleaner book, architects' and engineers' edition, contains 24 pages 9 by 11 inches, covering the construction details and installation of Tuec stationary cleaners manufactured by the United Electric Company of Canton, Ohio.

"**The Straight Road**," which is a sound, forceful sales talk that every dealer would be benefited by studying, has been sent out in folder form by E. C. Atkins & Co., Inc., Indianapolis, Ind., to several thousand members of Atkins Silver Steel Saw Club. This club is composed of retail hardware salesmen and "The Straight Road" is one of a series of talks being given by the Atkins Company.

Wood mosaic floors of hardwood, which are beautifying the interiors of buildings ranging in price from the modest home to the structure costing millions, are carefully described and their construction is explained in a 32-page book, 7 by 10 inches, beautifully illustrated in sepia, by the Wood-Mosaic Company, Rochester, N. Y.

"**Architectural Drawing**," a new book by Ralph F. Win-does and Harvey B. Campbell, B. S., published by the Webb Publishing Company of St. Paul, Minn., while intended for use as a text book for a high school course in this subject, will be found an excellent treatment of the elementary considerations of architectural design by anyone studying it with some previous knowledge of mechanical drawing. The book contains 150 pages and is 11 by 8 inches. Price, \$1.50.

(Continued to page 104.)

1866 CURTIS WOODWORK

"The Permanent Furniture for Your Home"

Your Responsibility Is Ours

The responsibility of the actual work of building this home rests upon you. We want to lighten that burden in every way we can. So we back you up by putting a blanket guarantee on **CURTIS** Woodwork. "Complete Satisfaction" is no half-hearted guarantee.

Your profits depend upon the work progressing according to the time limits you have laid down. Therefore, we are getting **CURTIS** Woodwork as nearly ready to be put in place as is possible before it is shipped to you.

You have set a time limit on each part of the job. It is therefore up to us to see that **CURTIS** Woodwork gets to you on the day you have arranged to have it come. This is our "On-Time" Service.

Call on a Curtis dealer and let him tell you something of the Curtis organization which makes this Curtis Service possible.

The Curtis Companies, Service Bureau
1641-1741 S. Second Street, Clinton, Iowa
Manufacturing and Distributing Plants at

Oklahoma City	Sioux City, Iowa	Detroit
Clinton, Iowa	Lincoln, Neb.	Minneapolis
Wausau, Wis.	Topeka, Kan.	Dayton, Ohio
	Chicago	

Eastern Offices at Pittsburgh and Washington
The makers of **CURTIS** Woodwork guarantee complete satisfaction to its users.

"We're not satisfied unless you are"

CURTIS Woodwork is advertised in the best National and State Farm Papers.

Country Gentleman
Michigan Farmer
Farmer's Guide
Farmer's Mail & Breeze
Wisconsin Agriculturist
The Farmer
Nebraska Farmer
Dakota Farmer
Oklahoma Farmer & Stockman
Wallace's Farmer
Successful Farming
Prairie Farmer
Ohio Farmer
Hoard's Dairyman
Oklahoma Farmer
Farmer's Review
Iowa Homestead
Wisconsin Farmer



Catalogs, Bulletins and Books Received

(Continued from page 102.)

"**Practical Structural Design**," by Ernest McCullough, C. E., is a text and reference work for engineers, architects, builders, draftsmen and technical schools and is especially adapted to the needs of self-tutored men. It is a book 6 by 9 inches and contains 304 pages. Publishers are the U. P. C. Book Company, Inc., 243 West Thirty-ninth Street, New York City. Price, \$2.50.

"**Rare Woods**," a beautiful and very carefully written treatise on the possibilities of decoration with the woods which are available today, together with brief historical notes regarding them and something of the progress which has been made in finishing them, has just been published by the Murphy Varnish Company of Newark, N. J. There are nine rare woods shown in faithful color reproduction in a very artistic manner on the left-hand pages of the book.

"**Practical Concrete Work for the School and Home**," by H. Colin Campbell, C. E., E. M. and Walter F. Beyer, C. E., is a well-illustrated shop and school manual of 160 pages, 5½ by 7¾ inches, which discusses, in easily understood language the fundamental principles of concrete construction and presents information of value to the beginner in ornamental and simple structural concrete work. The book may be obtained thru booksellers or from H. Colin Campbell, 824 N. Ridgeland Avenue, Oak Park, Ill., at \$1.50.



THE best way to help your customers pay their bills is to get them to pay while the bills are small.



A DEAD fish will drift with the tide, but it takes a live one to swim against the current.

Are You Acquainted? With



*If Not, You Have Some
Good, Live, Up-to-Date
Information Coming to
You.*

TRUSS LOOP

Will save you money four different ways. Any one of which is worth while
Will enable you to get the metal lath and plaster work in your territory
**The Quality of Your Work on "Truss-Loop" Will
Keep the Business**

Samples, Data Sheets and Specifications are yours for the asking. Just cut out this ad, put your name and address on it and send it in. They will reach you promptly.

THE BOSTWICK STEEL LATH CO.

Niles, Ohio



yes-this is the Roof!

Every carpenter, every builder, knows,
after all is said and done, that

RED CEDAR SHINGLES

Make the roof that is proof against the ravages of time; and siding both beautiful and enduring. It is well not to forget that good old-fashioned cut nails or zinc-coated are imperative for good workmanship and long life.

"IF IT'S RITE-GRADE IT'S RIGHTLY MADE"



The West Coast Lumbermen's Association is inspecting the grade and manufacture of 50 of the leading mills. You can identify these inspected shingles by the Rite-Grade Inspection mark illustrated herewith. Insisting on Rite-Grade is insisting on your shingles being up-to-grade.

FREE—Sample of Shingle, and Building Books

Write address below for one or all. (1)—Sample Shingle, an actual piece of Red Cedar. (2)—Barn Buildings—very useful facts in this book. (3)—Bungalow Book—twelve pretty designs with plans. (4)—Distinctive Homes—twelve fine houses with plans. (5)—Report of the University of Washington giving results of tests on the comparative fire resistance of roofing materials.

SHINGLE BRANCH

WEST COAST LUMBERMEN'S ASSOCIATION

426 Henry Building,

Seattle, Washington

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THE best way to help your customers pay their bills is to get them to pay while the bills are small.

Time to Build Ice House

An ice house costs little and saves much. This is the pronouncement of the National Lumber Manufacturers' Association in issuing its bulletin upon "Ice Houses and Ice Supply," written by F. M. White and C. I. Griffith, of the University of Wisconsin. In regions where natural ice is obtainable the cost of storing, including hauling and packing, averages about \$1 per ton. At this low cost no Northern farm can afford to be without a good ice house and a summer ice supply for household and dairy use. An ice house, or still better, a combination of ice houses and cold storage room, will enable the farmer to make the best dairy products, keep his fruits and vegetables fresh, get top market prices at all times, and live comfortably himself when hot weather comes next summer.

The bulletin shows simple designs of easily constructed but amply efficient ice houses and cold storage rooms, adapted to all ordinary farms. From three to five tons of ice are usually sufficient for household use, while on a dairy farm it is customary to allow 1,000 pounds of ice per year per cow, where only the cream is cooled, and two or three times this amount where the whole milk is cooled. A very small ice house will, therefore, afford sufficient storage to meet the wants of an ordinary farm. For thirty cows, where only the cream is cooled and allowing five tons additional for household use, a total of only twenty tons of ice per season is required, which can easily be stored in a house 10 feet square and 10 feet high inside. The main thing is to have the ice house well built with walls thoroly insulated, with solid foundation and floor, and proper ventilation.



A DEAD fish will drift with the tide, but it takes a live one to swim against the current.

Are You Acquainted? With



*If Not, You Have Some
Good, Live, Up-to-Date
Information Coming to
You.*

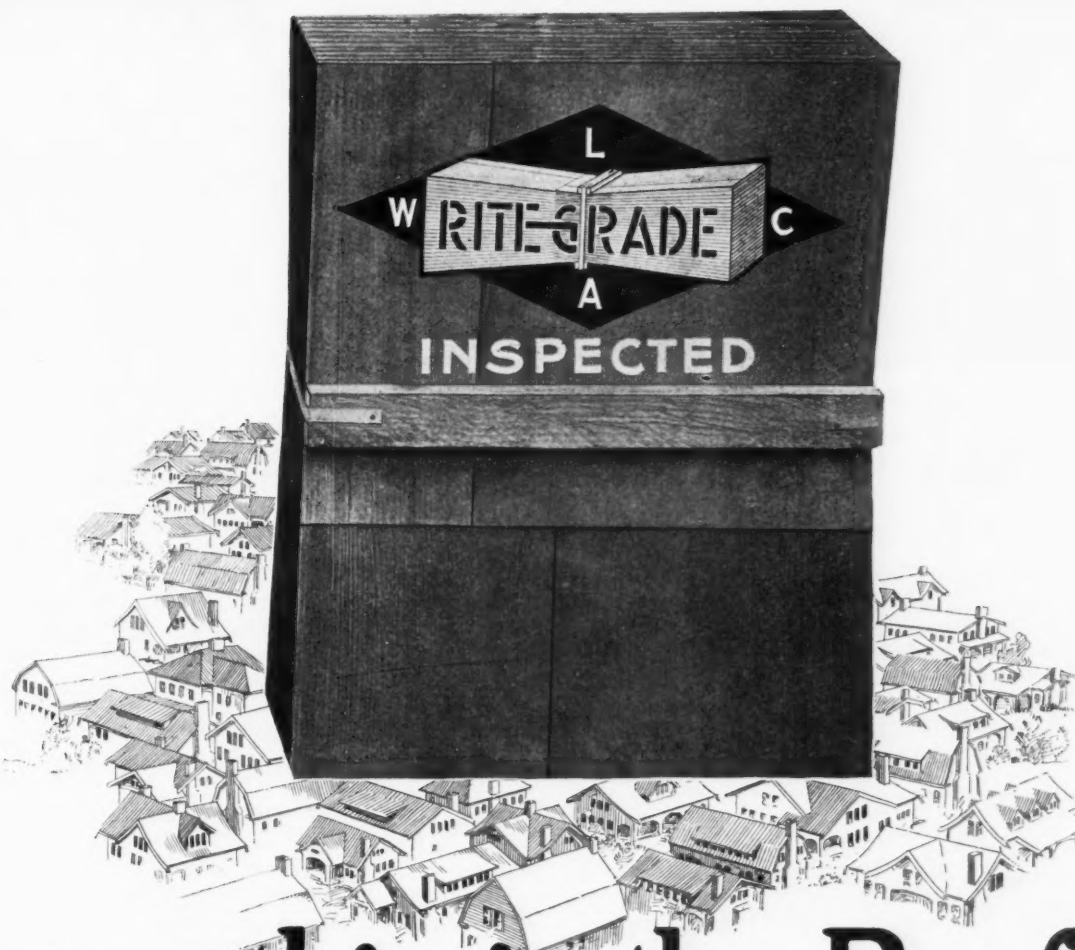
TRUSS LOOP

Will save you money four different ways. Any one of which is worth while
Will enable you to get the metal lath and plaster work in your territory
The Quality of Your Work on "Truss-Loop" Will
Keep the Business

Samples, Data Sheets and Specifications are yours for the asking. Just cut out this ad, put your name and address on it and send it in. They will reach you promptly.

THE BOSTWICK STEEL LATH CO.

Niles, Ohio



yes-this is the Roof!

Every carpenter, every builder, knows,
after all is said and done, that

RED CEDAR SHINGLES

Make the roof that is proof against the ravages of time; and siding both beautiful and enduring. It is well not to forget that good old-fashioned cut nails or zinc-coated are imperative for good workmanship and long life.

"IF IT'S RITE-GRADE IT'S RIGHTLY MADE"



The West Coast Lumbermen's Association is inspecting the grade and manufacture of 50 of the leading mills. You can identify these inspected shingles by the Rite-Grade Inspection mark illustrated herewith. Insisting on Rite-Grade is insisting on your shingles being up-to-grade.

FREE—Sample of Shingle, and Building Books

Write address below for one or all. (1)—Sample Shingle, an actual piece of Red Cedar. (2)—Barn Buildings—very useful facts in this book. (3)—Bungalow Book—twelve pretty designs with plans. (4)—Distinctive Homes—twelve fine houses with plans. (5)—Report of the University of Washington giving results of tests on the comparative fire resistance of roofing materials.

SHINGLE BRANCH

WEST COAST LUMBERMEN'S ASSOCIATION

426 Henry Building,

Seattle, Washington



*Plastering Rib Lath
Note heavy scratch coat, due entirely to stiffness of Rib Lath*

No More Cracked and Streaked Plaster

Contractors everywhere are finding that the use of Hy-Rib and Rib Lath products prevents cracked and streaked plaster. Wood lath absorbs moisture, expands and causes the plaster to crack and streak. Our metal lath does away with this trouble.

Use **Hy-Rib** and **Rib Lath**—and you save forms, stiffening channels and labor. Two coats of plaster can be used instead of three. This metal lath is so stiff and rigid that supports may be placed a greater distance apart, saving in the cost of supports and labor in installation. Moreover, it provides a **permanent, fire-proof** construction.



Hy-Rib furnished in four depths of ribs and various gauges

HY-RIB

A steel sheathing, stiffened by rigid deep ribs. Manufactured from a single sheet of steel its use is decidedly simple. The easily handled sheets are fastened to the supports and the plaster or concrete applied. No forms, stiffening channels nor wiring required.

Begin now to build with Hy-Rib and Rib Lath. The line is complete, including Diamond Lath, Channels, Studs, Corner Beads, Base Screeds, etc.

Write today for free copy of Hy-Rib Handbook, containing specifications, tables, illustrations, etc. Address Dept. H-44.

RIB LATH

A superior metal lath with beaded ribs that span between the studs, making it exceptionally stiff and rigid and permitting the wider spacing of studs. Provides a perfect clinch for plaster and prevents cracking or streaking of plaster. Saves time, labor and material in erection.

Trussed Concrete Steel Co.
YOUNGSTOWN, OHIO
Representatives in Principal Cities



NEWS OF THE FIELD

Sixth National Conference on Housing

The sixth national conference on housing in America was held in Chicago, beginning October 15. The conference, which lasted three days, was held under the auspices of the National Housing Association in co-operation with the City of Chicago and various business, civic and social service organizations. The membership of the National Housing Association is made up of more than 700 organizations and persons interested in housing problems. It acts as a clearing house for organizations engaged in the solution of these problems, in all parts of the country. The work of the National Housing Association is supported by the Russell Sage Foundation. Officers of the association are Robert W. DeForest, president; John M. Glenn, treasurer, and Lawrence Veiler, secretary. Headquarters are at 105 East Twenty-second Street, New York City.

The conference at Chicago had, as one of its vital subjects for discussion, the relation of present abnormal conditions to the housing of the employees of large industrial organizations. This subject was considered with respect to conditions existent in various parts of this country and abroad. The possibility of reducing the cost of the workingman's home, without sacrificing those things which experience has found to be essential, was discussed at some length. The morning sessions of the second and third days of the conference were divided into two sections, the one considering housing from a constructional standpoint and the other dealing with the matter of health. Municipal as well as industrial housing problems were given careful consideration.

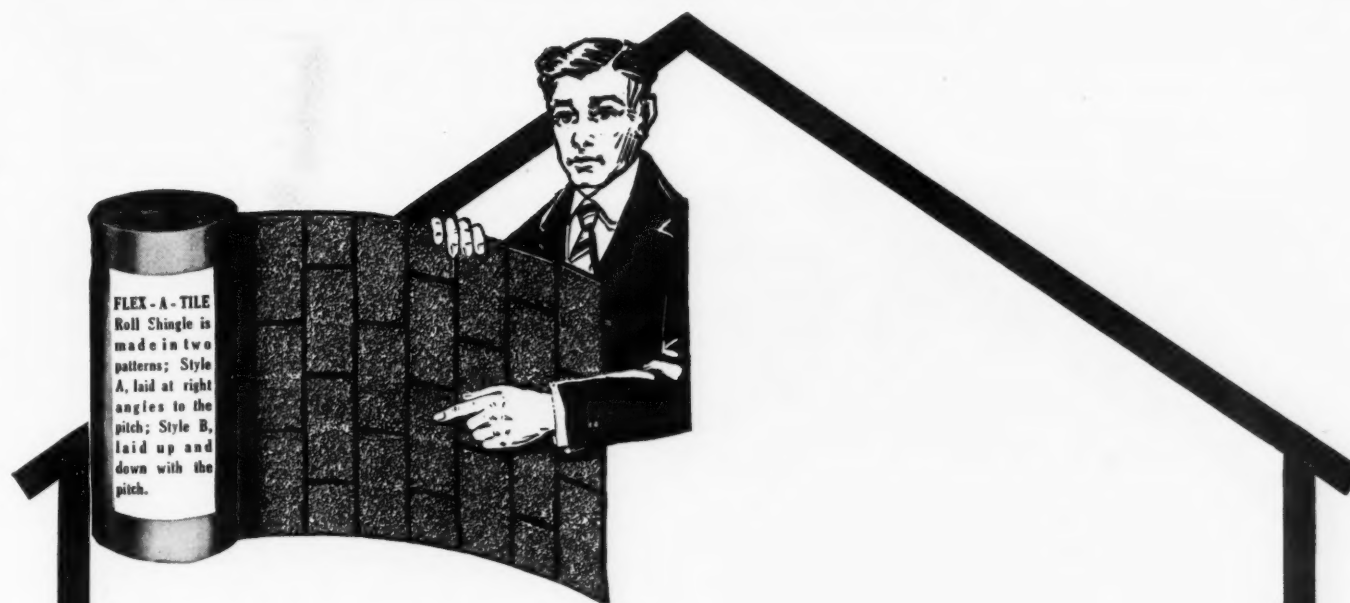
The afternoon program of the second day of the conference consisted of a first-hand study of conditions in various parts of Chicago, automobiles being provided for this purpose. The evening session was given over to an excellent paper on United States National Army cantonments and a study into the problems of the construction gang on large building projects. The afternoon of the third day was devoted to the question of proper methods of handling community housing work and the effective application of a housing law.

Too much cannot be said in favor of the study by every architect, contractor, real estate man and materials man of the questions brought up in these conferences. A thorough knowledge of the various phases of the broad subject of housing will place in their hands the means of providing better homes for the workingman. It will show them how to make it possible for the workingman to obtain a home which he can be justly proud of. It will give him a broader knowledge of the entire subject of home building and will make him a more capable man in his chosen field.



Grand Rapids to Have Better Homes Show

From Nov. 28 to Dec. 8, 1917, the Klingman Exhibition Building in Grand Rapids, Mich., will be the scene of the First Annual Grand Rapids National Better Homes Show. Space plans are open and the demand on the part of manufacturers of house furnishings for exhibit space predicts a wonderful interest and the success of the show.



No; not a New Roof, but an Old Roof Made New

THIS is a good time to get roofing repair business. Winter and heavy weather are almost at hand. Lots of people don't want to have an entire roofing job done—they don't want to go to the expense of laying a new roof. Yet they really don't realize that with the new FLEX-A-TILE Roll Shingles, old roofs can be made new at little expense. For FLEX-A-TILE Roll Shingles lie right over old shingle roofing jobs just as firm and tight and weather-proof as if it were a brand new roof on a brand new house.

FLEX-A-TILE

Roll Shingles

In the new style FLEX-A-TILE Roll Shingle the shingles face endways instead of across the roll. It actually gives the same effect as a roof of real FLEX-A-TILE Asphalt Shingles with butts exposed, size 5x10 inches. We don't get the shingle effect by using paint or imitation patterns of any kind. It is an actual FLEX-A-TILE Asphalt Shingle roof in every way—with this exception: You get the wearing quality and the good looks of the FLEX-A-TILE Asphalt Shingle roof with the economy and saving in laying time of roll roofing.

Send for Prices and Samples

Let us supply you with samples of this new style FLEX-A-TILE Roll Roofing. Let us quote you prices. Let us give you suggestions as to how to get new roofing business.

The Heppes-Nelson Roofing Co.

Marshall St. N. E., Minneapolis, Minn. :: Dept. L1010 Kilbourne Ave., Chicago, Ill.

Factories: Chicago and Minneapolis

FLEX-A-TILE Slab Shingles, No-Tar Asphalt Paint. FLEX-A-TILE Roll Roofings

Trailer Factory Constructed in Twenty-four Days

The completion of the new factory of the King Trailer Company at Ann Arbor, Mich., in twenty-four days marks a new record in factory construction.



Interior of New Factory for King Trailer Co.

"Business was coming so fast that we simply couldn't handle production in the old quarters," said Mr. McClough-ton, sales manager of the company, "so it was a case of move fast to keep up with orders.

"The contract was let to the Austin Company of Jackson, Mich., on June 25th and five days later construction work commenced. By July 25th the factory was occupied and the company mechanics were hard at work turning out trailers."



60 by 100 Feet King Trailer Co. Factory, Built in 30 Days.

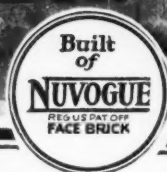
The new building occupies 9,600 square feet—60 by 160—and is brick, steel and concrete construction thruout. Daylight lighting and proper ventilation are assured.

Altho the construction speed is phenomenal and sets a building record, the construction is anything but flimsy. Foundations are concrete and the walls are brick below sills laid in cement mortar. Columns are structural steel. Roof structure is also structural steel with I-beams set horizontally. Floor is concrete. Ventilation is provided by the four light ventilators located in each section of the sash.



Largest Slate Sales Agency Established

Builders and architects will be interested to learn of the service that is now available thru the Vendor Slate Company, Inc., Easton, Pa. This is a selling agency for some thirty-six of the prominent slate producers—probably the largest shippers of roofing slate in the world. It is a convenience to be able to obtain from the same concern a considerable choice or range of varieties in roofing slate. From their numerous quarries, the Vendor Slate Company furnish any of the following well-known slates: Genuine Bangor, Albion Bangor, Jackson Bangor, No. 1 Penn Argyl, Slatington Big Bed, Washington Big Bed, Through Creek Big Bed, and Franklin Big Bed.



Drop us a line and tell us what you are figuring on building this Spring

HUNDREDS of progressive contractors are finding that brick construction is as easily handled as frame; and it has many advantages—the principal one is, that it gives your client a more permanent home and relieves him of the continual expense of painting and upkeep.

Then we will tell you how "Artfashioned" Brick can be used to advantage

Artfashioned Brick are made in a wide range of colors and textures. There is a Nuvoque Brick for every style of architecture—from the modest bungalow to the best building in town.

You can get "Artfashioned" Brick from your Local Dealer

We have hundreds of lumber dealers in the Middle West now handling "Artfashioned" Brick. If your local dealer does not carry our line ask him to write us. We prefer to furnish it through his yard.

BOONE BRICK TILE & PAVING CO., Manufacturers of Artfashioned Brick, Boone, Iowa
Sales Offices all through the Middle West

MADE IN IOWA!



Build with Beaver Brick

Beauty and permanence of construction can be obtained with this brick at a cost but slightly greater than for frame.

Well burned face brick is universally recognized as the most beautiful and durable building material in existence, and the advantages of brick construction are many.

¶ Brick homes are practically indestructible. Insurance rates are low and the cost of upkeep such as painting and repairs are reduced to a minimum.

¶ Houses of brick maintain an even temperature at all times. Cool in summer and warm in winter.

Beaver Brick is made in a variety of colors and textures. Beaver Clay, Turkestan Vertex and Volcanic Extreme Rough Texture represent the best in facing brick. Our catalog shows them in their natural colors.

Write Today

BEAVER CLAY MFG. CO., NEW GALILEE, PA.
SALES OFFICES IN ALL CITIES



Maritz & Henderson, Architects

B. F. Charville, Builder

*Residence of H. L. Sallenback, Saint Louis
Built of Kiln Run Hy-tex Chaldeans.*

Don't encourage your customers to put off building. Every building-material man knows that prices cannot go down during the war, or for some time after the war.

For some years to come there will be no more favorable time for building than the present.

And don't forget to tell your customers of the advantages in a brick house—beauty, comfort, safety against fire and economy against depreciation.

Every one of our offices is ready to cooperate with you.

Hy-tex

The Standard of Quality in Brick

Hydraulic-Press Brick Company

Saint Louis

Branch Offices: Baltimore, Chicago, Cleveland, Davenport, DuBois, Pa., Indianapolis, Kansas City, Minneapolis, Omaha, Philadelphia, Roseville, Ohio, Toledo, Washington

Largest Manufacturers of Face Brick in the World

Send for these Booklets

"Hy-tex Brick" tell you the many advantages in building with brick, and something about the completeness of the Hy-tex line and the benefits you can derive from Hy-tex Service.

"Suggestions for Small Hy-tex Homes"—shows the possibilities of brick in small homes. It is illustrated with perspectives and floor plans of small brick houses.

Mail the Coupon NOW

Hydraulic-Press Brick Co.
St. Louis, Missouri

Send me "Hy-tex Brick" and "Suggestions for Small Hy-tex Homes."

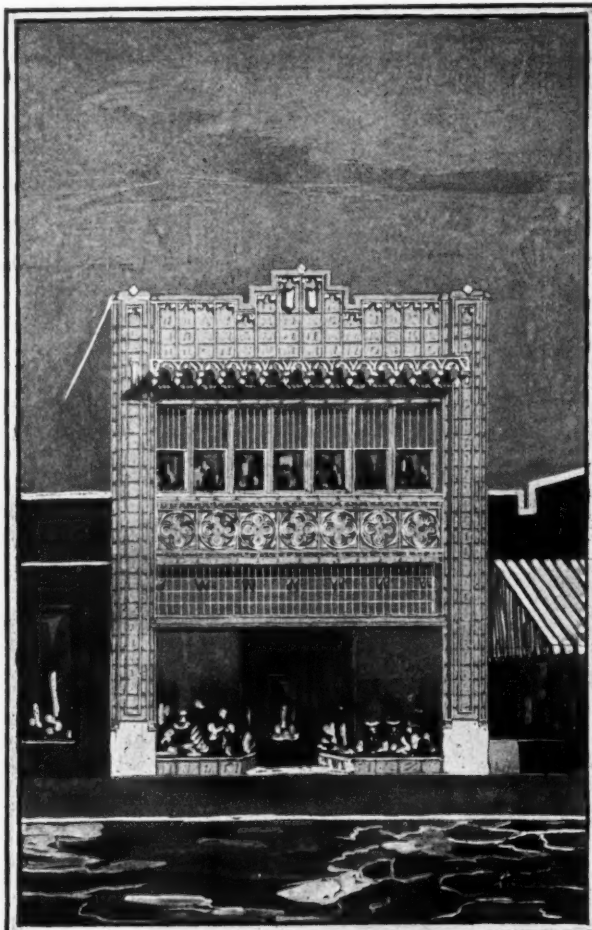
.....

.....

Name.....

Street.....

City..... State.....



WHEN YOU ARE KNOWN AS THE BUILDER OF
GOOD LOOKING AND PRACTICAL STRUCTURES—
THEN YOU HAVE A

REPUTATION

LARGER WORK AND MORE OF IT WILL COME
TO YOU

MIDLAND TERRA COTTA

WILL HELP YOU GET THIS REPUTATION. THE
SHOP ABOVE WAS DESIGNED BY OUR ARTISTS
FOR YOU—WE HAVE THE MOULDS

MIDLAND TERRA COTTA COMPANY

1515 Lumber Exchange, Chicago

C. O. Frisbie, Jr. in Ambulance Service

C. O. Frisbie, Jr., son of Mr. C. O. Frisbie, president of the Cornell Wood Products Company, has enlisted in the American Ambulance Field Service, and expects to see active service before November 1. He attended the Military School at Howe, Ind., and also had several years of military training at the University of Wisconsin.



C. O. Frisbie, Jr.

Ransome Company Holds Annual Meeting

The annual meeting of the Ransome Concrete Machinery Company was held at the Dunellen plant, Dunellen, N. J., and the Queen City Hotel, Plainfield, N. J., October 12, 13 and 14.

Tribute was paid Ernest L. Ransome, founder of the company and builder of the first reinforced concrete building and the first reinforced concrete bridge in the United States. Mr. Ransome died on March 5, 1917, at his home in Plainfield, N. J. His name will always be intimately associated with the early development of concrete construction.

Beaver Board Dealer Advertising Helps

The Beaver Board companies have recently launched upon a campaign to assist their dealers, in a large way, to develop the market for this wall board, as well as to extend their entire business by local advertising. The service which they have worked out consists in a large amount of forceful circular matter, window displays, letter enclosures and electrotypes advertising plates, which material is supplied the dealer for use in the local field. At the same time, a national advertising campaign is being carried on by the Beaver Board Companies and the local advertising is cleverly tied up to the national advertising in some cases by furnishing the dealers with plates which are smaller reproductions of the advertisements run in the journals of national circulation. This sort of service is appreciated by the progressive dealers, who have come to know that business comes to those who make special effort to get it.

Here's an Original Work on Farmhouses

"Farm Houses—How to Build the New and Improve the Old," is the title of an attractive booklet just published by the National Lumber Manufacturers' Association as one of its series upon Better Buildings. The farm house bulletin is written by Wm. A. Etherton, Professor of Rural Architecture in the Kansas State Agricultural College and member of the American Institute of Architects. Prof. Etherton was born and brought up on a farm and when it comes to the planning of the farm home he is upon familiar ground. The bulletin just published goes into a large number of practical details upon the planning and arrangement of the

(Continued to page 112.)



Vitrified

—having the exterior converted into a glaze or having the substance hard and glassy from exposure to heat, as vitrified tiles—*Century Dictionary*.

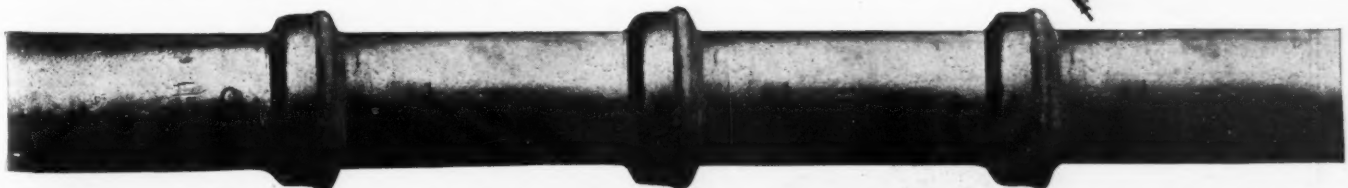
YOU believe in vitrified porcelains and tiles for the modern bathroom, because you recognize their perfect cleanability and their everlasting resistance to corrosion and wear.

Vitrified Clay Pipe house drainage is even more important, because its lasting qualities are a safeguard against ugly jobs of tearing up.

The glazed interior of vitrified drains and sewers means perfect flushing of the contents. Vitrified drains are not expensive; they resist acids and electrolysis and last as long as the lot.



Let us send you this folder describing the latest and best joint practice.



THE SEWER PIPE MANUFACTURERS' ASSOCIATION
 JOHN L. RICE
 FIELD COMMISSIONER
 SECOND NATIONAL BLDG
 AKRON, OHIO

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

"It will keep your trucks in operation all Winter"

No more costly lay-ups on account of the weather. By giving your truck drivers full protection, the **ALL-YEAR Cab** increases their efficiency, discourages speeding, diminishes accidents, and insures proper handling of your trucks.

By adding the Winter attachments the **ALL-YEAR Cab** is warm, dry, closed and proof against the most severe weather. In summer, it is quickly changed into a cool, open housing.

KISSEL TRUCKS

Five new sizes—a truck for every purpose

Dependable performance is **built-in** to every Kissel Truck. The perfected worm-drive rear axle, superior front axle, reliable Kissel-built power-plant, sturdy double external brakes, and special heat-treated frame, are a combination of truck essentials found only in Kissel Trucks. That is why Kissel Truck owners in the carpentering and building field are getting efficiency in performance and economy in time and up-keep.

See your Kissel dealer today or write us for literature on the new Kissel Trucks and the **ALL-YEAR Cab**.

Kissel Motor Car Company
HARTFORD, WIS., U. S. A.

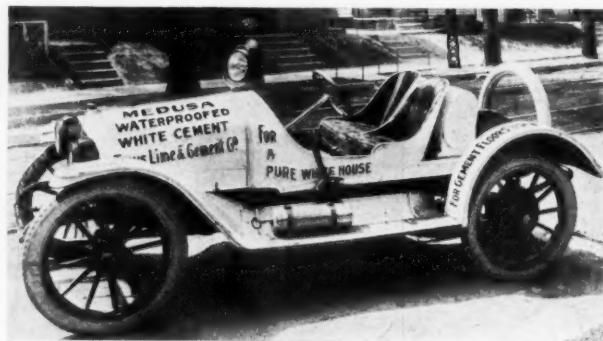
(Continued from page 110.)

kitchen, which is the workshop of the farmer's wife, the arrangement of rooms for farm help and building thru-out in such fashion as to make the house warm in winter, cool in summer, and bright, healthy and altogether livable without undue expense.



You Auto See This Ad

F. A. Pipkorn, manager of specialties for the Tews Lime & Cement Company, Milwaukee, Wis., is utilizing his auto as a traveling advertisement, having had it painted pure white with bright red wheels. White leather signs were fitted on the



Advertising Car Used by the Manager of the Specialties Dept. of the Tews Lime and Cement Co., Milwaukee, Wis.

sides of machine, hood and fenders, and these are fastened with buttons so they can be removed at will. They make the fact known that Medusa Waterproofed White Cement should be used for floors and stucco houses.

The Tews Lime & Cement Company ranks as one of the most prominent building material dealers in the country, and the Sandusky Cement Company is fortunate in having such an enterprising and reliable firm represent them in Milwaukee and vicinity.



"EXPERIENCE is the great test of truth and is perpetually contradicting the theories of men."

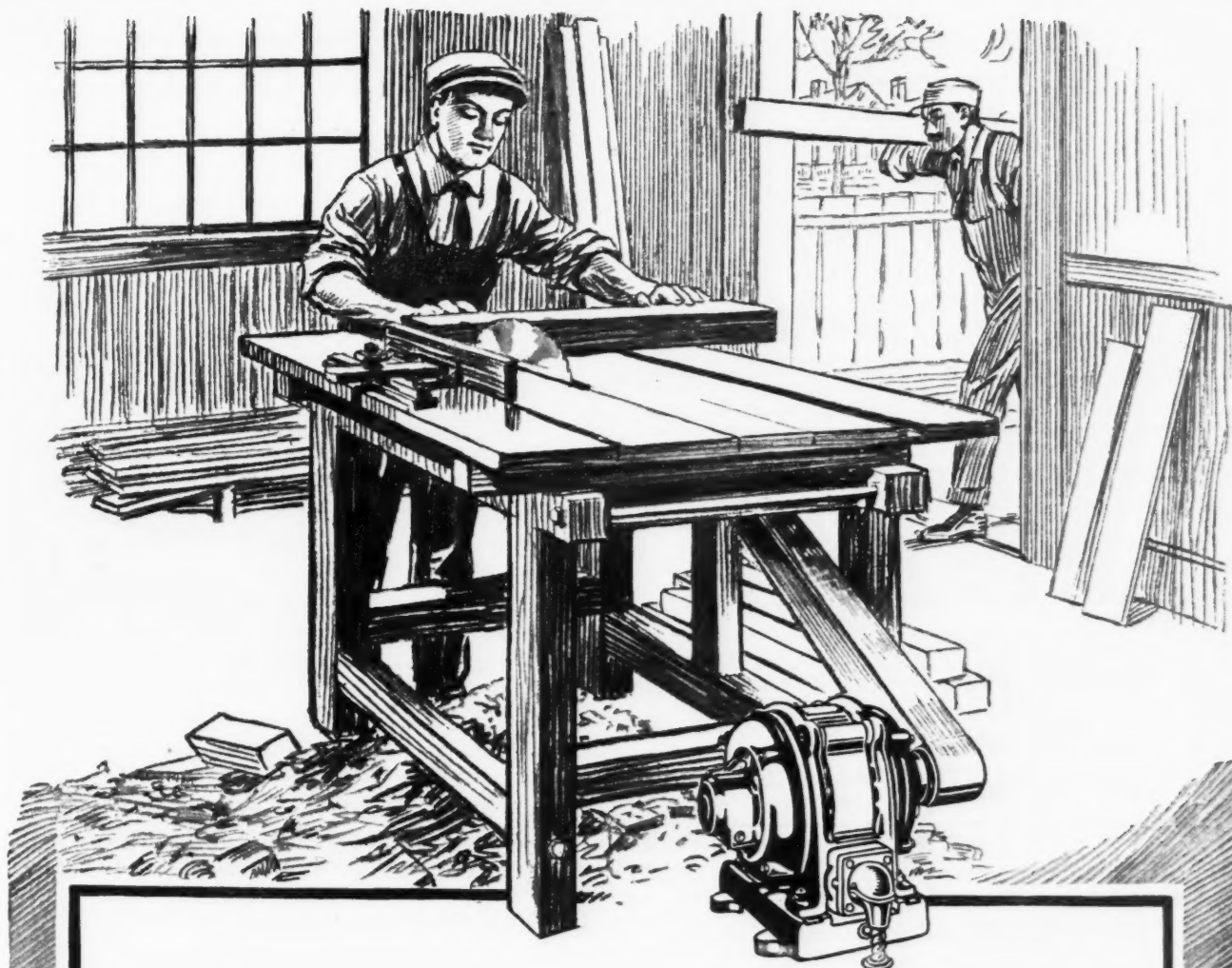


YOU cannot push a man up a ladder unless he is willing to do a little climbing himself.



Hendrick's Commercial Register for Buyers and Sellers

The twenty-sixth annual edition of Hendricks' Commercial Register of the United States for Buyers and Sellers, has just been issued. This standard publication is especially devoted to the interests of the architectural, contracting, electrical, engineering, hardware, iron, mechanical, mill, mining, quarrying, railroad, steel and kindred industries. Full lists are included of producers, manufacturers, dealers and consumers, listing all products, from the raw material to the finished article, together with the concerns handling these products, from the producer to the consumer. There are 2209 pages of text matter and the index to trade classifications numbers 151 pages, covering over 50,000 trade references. The list of trade names, brands, titles of identification, etc., numbering 1212 pages, furnishes ready reference to distinctive products manufactured by concerns listed in the work. The alphabetical section is included for the first time and contains in one alphabetical list the name, trade description and address of every concern appearing in the book. S. E. HENDRICKS COMPANY, INC., 2 W. 13th Street, New York City. Price, \$10.00. (Advertisement).



An Electric Motor On The Job

is as good as an extra man, for it's the odd jobs and the special work that takes the time.

Put a portable electrically driven saw or buzz planer on your next construction job.

The cost for power is only a few cents an hour.

With motor driven outfits your men can rush work through with the same speed and sureness as in your own shop.

Tell your power needs to your electric company or our nearest motor agency.

General Electric Company

General Office



Schenectady, N.Y.

Sales Offices in All Large Cities

6970



ALLIANCE MULTI-COLOR RUFF BRICK

EXCEL ALL OTHER BRICK as to beauty of coloring. The chromatic scale of colors runs through the beautiful rough-texture faces, most of the individual brick showing on the face of each brick three or four or more of the seven primary colors or their shades—gum-metals, wines, chocolates, browns, ex-blood reds, bluffs and multi-colors.

Mr. Dealer: If you want the best seller among the many brick made today ask for the agency for Alliance Multi-Color Ruff Brick—beautiful rough-texture and all the colors of the rainbow. Samples and prices on request.

The ALLIANCE BRICK CO., 25 South Linden Ave., Alliance, Ohio

WITHOUT OUR ESTIMATE YOU HAVE NO COMPETITION

The Whitacre-Greer Fireproofing Co.

Manufacturers of
HOLLOW TILE FIREPROOFING
and BUILDING BLOCK

Waynesburg, Ohio

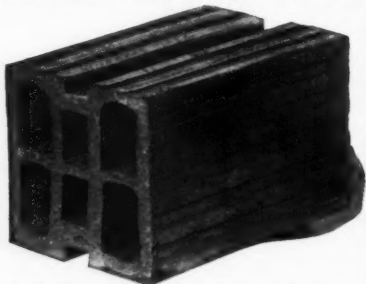
Chicago Office:
538 South Dearborn St.

Pittsburgh, Office:
7138 Jenkins Building

FIREPROOFING MADE OF PURE FIRE CLAY

"HEAVY DUTY" INTERLOCKING TILE

The STRENGTH of BRICK and the DRYNESS of TILE are combined in Vigo American Heavy Duty Interlocking Tile to make a BETTER wall than solid brick and at two-thirds the cost.



We also manufacture Fireproofing, Building, Arch, Partition and Drain Tile, Hollow Brick and other shale products. Send for our literature.

VIGO-AMERICAN
CLAY COMPANY
7th and Ohio Sts., TERRE HAUTE, IND.

You Can't Afford to Be Without "Nice" Liquid Filler

BECAUSE it means an economy of both time and material to you.—It requires little, if any, sand-papery and dries hard in 8 to 12 hours, allowing one-coat-a-day work to be done with safety.—It will enable you to make first-class jobs on close grained woods with one coat of filler and one coat of varnish.—It will hold out varnish better than shellac and will cover 800 sq. ft. to the gallon.—It will make the very best Flat Stain by simply shading with colors in oil or a varnish stain by adding a little good mixing varnish. It is very valuable as a first coat for floors to bring them up to an even surface.—It helps the user over many a difficult place and adds to the quality of his work.

Be sure you get the genuine "Nice" Filler. Ask your dealer to show you Nice or write for our prices and catalog of varnishes, paints, coatings, fillers, enamels, etc.

Eugene E. Nice

Philadelphia, Pa.

How Camp Devens Was Built

(Continued from page 62.)

Similar tickets would be written separately for 2-by-6's, 2-by-8's, etc. Rough and finished stock of the same dimension would also have separate tickets. These tickets would then be distributed to the group of mills which had the least work ahead, with an eye also to the amount of stock on hand in the piles back of it.

Each stick was marked "11" or "17" as it went over the table. This table was narrow, being nothing but a plank at the outer end supported by a leg. But it was planed smooth and marked off in feet from the saw. When a batch of work was started, the foreman set a block of wood at the proper distance and clamped it firmly into place as a gauge. As the piece came off the table it was received by a laborer, with another laborer at the other end if the pieces were long, and placed on the ground between two stakes. All the pieces of one kind and length and mark were thus placed in the same "bin," and the top ones marked with the number of the building they were for. Also, all material for the same building, having been cut in this and the closely neighboring mills, was stacked in adjacent bins, so that the complete building frame lay in a compact space.

As fast as the different lengths were cut, the foreman would check them off on the cutting ticket, when completed. The cuttings would then be signed and returned to the superintendent of the mills. He would then notify the unloading superintendent's distributing clerk. His work was done, except for the duty of keeping the mills supplied with new work in an always steady flow. The work was sometimes very fast. For instance, an order was received one morning at 9 o'clock: "Make one bldg, mark 1421, Type EL. Rush." It was all cut at 10 o'clock and delivered on the job to the ready carpenters a few minutes later. Still better results could be had if necessary, by splitting up the 2-by-4 tickets among all the 2-by-4 mills.

The fourteen small saw and planer mills were not the only sawing equipment. To clip or square the ends of boards and of dimension lumber which was to be used in even feet, another much more ambitious piece of equipment was put in. It happened that a saw mill was being torn down at Mt. Tom, Mass., whence the Connecticut River Lumber Company had been forced to move by the expense of getting logs down the river from an ever-receding wood supply. The contractor bought from this mill its large "clipper" or battery of saws, with its conveyor system and table, apron and sorting table, and moved the whole down to Ayer. This gang of saws is spaced 2 feet apart beneath slots in the table, except for the left end saw, which is always in place. Positive feed conveyors brought the boards or lumber squarely up to the saw-slots. A man standing at a series of levers beside

(Continued to page 116.)

No Sagging or Buckling, no Falling Plaster, if You Buy Herringbone Lath

Exceptional rigidity is the leading characteristic of Herringbone Rigid Metal Lath. This is due to the heavy longitudinal ribs set on edge at an angle of 45 degrees. If the material was expanded in any other way, the characteristic rigidity of Herringbone, the unequalled strength and stamina that go with it, would not be possible.

Herringbone in 24 gage, weighs 3.4 lb. per sq. yd. weight endorsed by the Concrete Institute, Associated Metal Lath Manufacturers, the Building codes of New York and other metropolitan cities—the lowest weight that is safe and ultimately economical for modern stucco and plaster construction. Herringbone Lath is not only exceptionally rigid; it is also self-furring. Thus it eliminates the need of costly furring.

Herringbone Rigid Metal Lath

Because of the perfect "key" between the plaster and the lath, the exterior stucco walls and interior plaster walls, ceilings and partitions, held together and strongly reinforced by Herringbone Rigid Metal Lath, cannot crack or fall in pieces. They bar out fire, mice, rats, vermin, weather and decay. For plaster and stucco work in damp climates, on the seashore, in industrial centers, and wherever moisture is excessive; rust-resisting, non-corrosive Herringbone "Armco" (American Ingot) Iron Lath should be used.

To make sure that you get the full weight metal lath—so necessary from the standpoint of safety, economy, and permanence—buy metal lath by *weight per square yard* as well as by gage. To make sure that you get exceptionally rigid, economical and durable metal lath, buy *Herringbone Rigid Metal Lath*, and see that it is brought on every plaster job.

Send for the Herringbone Catalog, if you would like complete information about this superior type of metal lath construction.

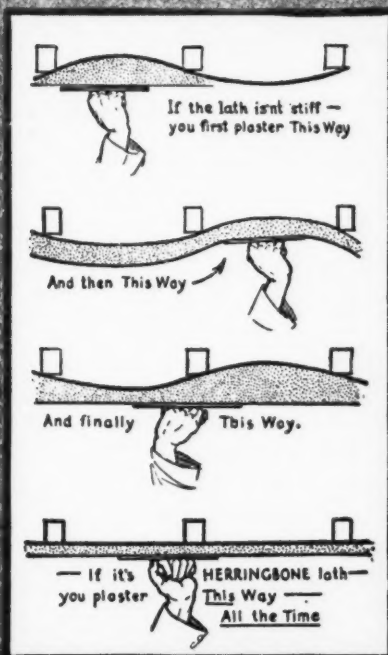
THE GENERAL FIREPROOFING CO., - Youngstown, Ohio

Manufacturers of Metal Lath, Concrete Reinforcements, and Waterproofings

Members of Associated Metal Lath Manufacturers

Branch Offices: New York City, Chicago, Philadelphia, San Francisco, Kansas City, Atlanta, Cincinnati, Buffalo, Utica

The best dealer in your town has GF Products in stock



How Camp Devens Was Built

(Continued from page 114.)

the table could judge the largest possible even length of the piece, elevated the proper saw, and both ends were clipped square as the piece went thru the clipper. This arrangement ate up the boards and lumber wholesale.

However, when boards were not to be sawed in the clipper, but on the job by the carpenters, there was no need to store them at the yard at all, if proper facilities for moving them immediately to the site could be had. The traffic man in the purchasing department tried to keep a steady flow of the material coming in on cars, so as not to have any lean days or peak loads, and he succeeded very well. The rest was up to the unloading department. The superintendent of this is really superintendent of both unloading and distributing. He divided the yard into three parts, one for dimension lumber, back of the saw mills, one for boards, roofing paper, posts, and other material in which there was little subdivision; and one for piping, metal supplies, etc. Over each of the first two he had a foreman for unloading, each of whom had as many sub-foremen and gangs as he needed. These moved things in.

So as to move things out in an orderly fashion, the superintendent had a foreman-clerk stationed in a booth which commanded the outlet of the road running in front of the saw mills and past the board

yard. A truck coming after a load stopped at the booth and the chauffeur was given a ticket telling him that his next load was Building No. 1116, stacked in front of mill No. 10. He got the building, and on his way back signed for it at the booth.

He did the same for boards, signing for them by the estimated number of feet in his load, and its destination. Each truckman generally worked for the same construction foreman for days at a time, and would ask the booth clerk for assignment to material for that foreman if possible. Thus he was a connecting link between the individual foreman and the distributing yard, tho he was not responsible to that construction foreman except as one gentleman to another. The chauffeur was responsible to the special superintendent of trucks, Martin Keany.

Keany had charge in all of 140 trucks. If a foreman of sewer construction wanted ten trucks, for the next day's work, he would send in a requisition to Keany for them. Likewise, the other superintendents and foremen. The trucks gathered at one place in the camp before starting work in the morning, and again at the same point at night. This was the time when the truckmaster issued assignments for the day's work. If he had trucks enough to fill all requisitions, they would be filled. If not, it was up to him to apportion those on hand as best he could, and then if the demand showed signs of keeping up, to scurry

(Continued to page 118.)

A Serviceable Ornament

The demand for a strong, serviceable door stop that will stand up under the bumps and jams, abuses such as it gets and yet ornament the base board is not overlooked in the

Griffin Pressed Steel Door Stop



No. 640
Patented
Cut Full Size

a beautiful, plain and ornamental door stop.

This Door Stop is made from the highest quality cold rolled strip steel, drawn into shape from one piece of material. The rubber bumper is so fastened that it absolutely cannot work out. It is the strongest Door Stop ever placed on the market and we guarantee it to be indestructible. When fastened in place with three round head screws will hold a weight of 250 pounds hung on the end.

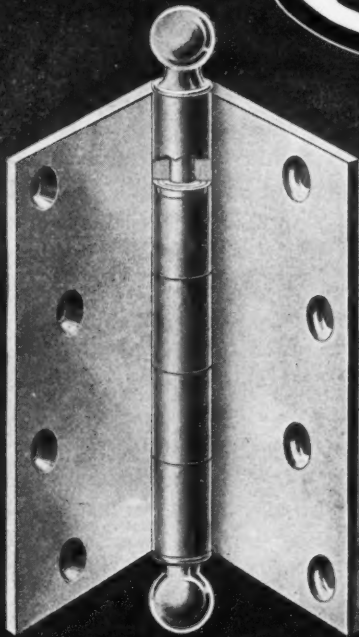
Finished in any of the Griffin hardware finishes; wrapped and packed with screws.

The GRIFFIN MANUFACTURING CO.

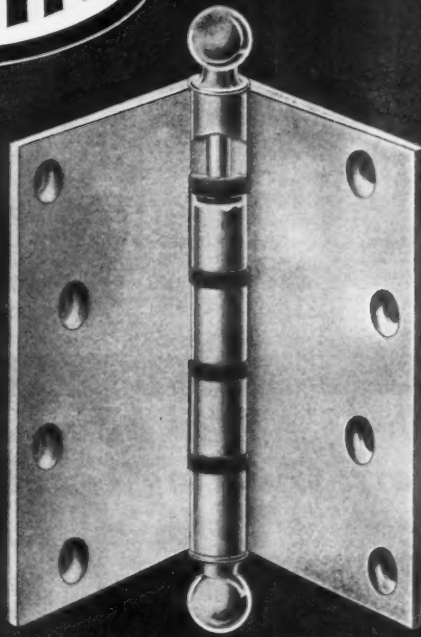
30 Warren St.
NEW YORK

ERIE, PENNA.

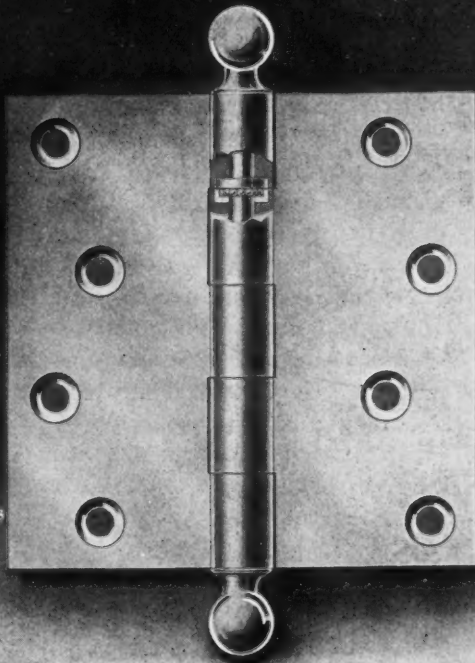
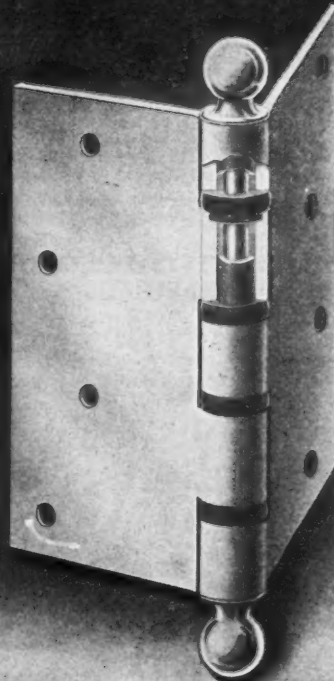
17 E. Lake St.
CHICAGO



With Lubricating Washers



With Shouldered Fibre Washers

With
Ball-BearingsWith
Fibre
Bushings
and
Fibre
Washers

HIGH GRADE DOOR BUTTS

We are specialists in noiseless, easy-acting door butts that will last longer than the building and show no appreciable amount of wear. Template butts for steel doors, lighter and smaller butts for use on small doors, as well as heavy butts for massive entrance doors. We cover the whole range of butt requirements. See the best hardware dealers for particulars, or write to

P. & F. CORBIN

The American Hardware Corporation Successor

NEW BRITAIN, CONN.

CHICAGO

NEW YORK

PHILADELPHIA



There's Real Money in Barn Building For You

Think of the barn jobs in your community that you could get with the help of James service. Farmers are today awake to the needs of better built barns and are finding exactly what they want in James Barns and James equipment. They are reading our advertisements in their leading farm papers—and they know through years of service the matchless quality of anything in barn equipment bearing the James trademark.

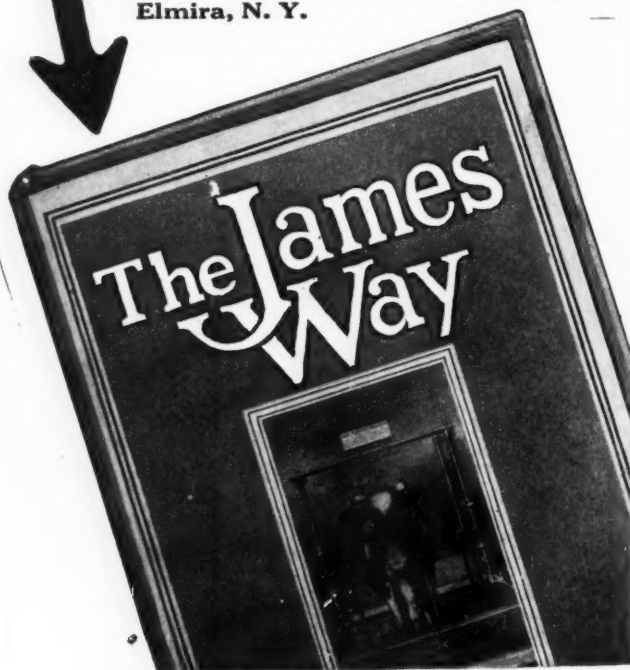
Send us the names of farmers you know who wish to build or remodel their barns, and mention the size of their herds. We will circulate the farmers whose names you send us, and will send you our book

The James Way—FREE

Our book should enable you to suggest to your customers the most practical way to handle their barn problem—how they can save time and work about the barn—get the right plans—avoid mistakes in building—best ways to arrange equipment—provide lighting, ventilation, make good use of floor space, etc.

Take advantage of our service and get more and better barn contracts

James Manufacturing Co.
EP-76 Cane St., Ft. Atkinson, Wis.
Elmira, N. Y.



How Camp Devens Was Built

(Continued from page 116.)

around and get more trucks, from Boston, Fitchburg, or anywhere so long as the lack of them did not delay the work. The truckmaster had a small machine for his own use, and kept tab on the movements of the trucks, so as to get full efficiency out of them. He also kept the time of all trucks.

This yard so divided, with a foreman of unloading at the dimension lumber end and another at the board end, a superintendent of saw mills, and a distributing clerk, all under a superintendent of unloading and distributing, who was a regular Ley superintendent of construction, handled 3,000,000 feet of lumber a week. The various grades of foremen and sub-foremen totalled 35, with 450 men, mostly laborers.

Just as the wooden frame of a building went up the road all together in a truck, so the plumbing is dispatched in a similar way. That is, the entire rough plumbing for each building, not only cut but assembled in sections so far as possible, is loaded into a truck and dispatched to its site, sometimes before the wooden part of the building is there. In fact, the plumber looks upon the load of piping as "Building" No. so-and-so.

The plumbing superintendent has his raw material delivered along a special side track. Forty benches are ranged in order along beside the track. Each kind of stock is unloaded at a point selected for it, nearest where it is to be worked up.

The plumbing superintendent made from the plan of each type of building a skeleton sketch of the plumbing. Each sketch he divided again into three main parts, rough plumbing, supplies, and fixtures. The rough plumbing was again sub-divided into sections. Each of these sections, tho composed of several fittings and pipe pieces which would have to be cut, was made up with tight joints ready to be put in as it stood, except for making the joints with the next preceding and following sections. These schedules of sections correspond with the cutting lists of the saw mills, except that the material was partly made up into assembled form.

In doing this, the work progressed from one group of benches to another, each group also being subdivided to handle always the same kind of work. There were benches and men who did nothing but cut cast-iron pipe to the length of a stick furnished by the foreman. This stick was a check on the gage which might slip. Some of the benches were fitted with special structure to hold more securely the irregular shapes of the sections being made up on them. None of these sections were designed to be too long or too heavy for quick handling by a man and helper, but even then, the work was made at once easier and faster by these special brackets to hold awkward forms.

(Continued to page 120.)



J. E. Porter Company
Established 1868
Sold by
Leading Dealers
Everywhere



Write for Catalogs

Let us send you our Catalogs—No. 62 on Barn Equipment and No. 61 on Haying Tools—at once, with complete illustrations of the PORTER LINE, including Stalls, Stanchions, Garage and Barn Door Hangers, Litter Carriers, Partitions, Sanitary Drinking Bowls, Galvanized Steel Mangers, Pens, Milk Can Carriers, Feed Trucks, All Barn Fixtures, Ventilators, Haying Tools, etc., etc. Sent FREE.

J. E. Porter Co.
Ottawa, Ill., U. S. A.

Build or Remodel With PORTER Guaranteed Sanitary Barn Equipment



Building or remodeling your barn of any size, or planning for future enlargement, proceed scientifically, through PORTER, to

- save time and labor; build conveniently.
- make the most of your space.
- consider simplicity, sanitation, long-lived durability.
- plan stalls and stanchions on the PORTER Unit System.
- invest wisely in the biggest dollar-for-dollar value, considering materials, design and helpful expert service.

Be Proud of Your Barn

It marks your place and standing in the community, among neighbors and with strangers.

It puts more money into your pocket, every day, to properly "barn" your livestock, considering cleanliness, roominess, sanitation, ventilation, convenience.

It means "comfortable cattle," therefore more productive, thriving and profitable herds.

All practical experience and the scientific experiments by Agricultural Stations, as well as good common "horse sense," prove these points, as you well know.

Porter Equipment Is World-Famous for Its Simplicity, Sanitary Features and Durability

You don't want complicated contraptions, built all around some theory rather than on the principle itself.

You will find all PORTER PRODUCTS to your liking along sensible lines. No frills—only strength, standardized so carefully and built under such rigid inspection that each part is interchangeable, fits perfectly, lasts, and works easily.

When a man tries one PORTER PRODUCT he is sure to want others.

When you equip your barn with PORTER PRODUCTS they are there for all time—to stay and give complete satisfaction—GUARANTEED.

Complete Floor Plans on Request. Blue Print Specifications. Easy-to-Follow Instructions. Guaranteed Right—Cost Estimates. FREE.

Let us figure with you.
Get out your pencil now and write us your wishes and questions you want answered.

Write PORTER Your Wishes

J. E. PORTER CO. 8092 Guion St., Ottawa, Ill., U. S. A.

Send me your Catalog 62 on PORTER Guaranteed Sanitary Barn Equipment FREE.

I expect to build (.....) or remodel (.....)
(Date?) (Date?)
and want full information without obligation.

Name

Dealers Represent This Widely Advertised Line of Barn Equipment

PORTER'S plans for service and close cooperation with Dealers, Contractors and Builders this year include a broad campaign of Advertising in leading Farm, Dairy and Newspaper Publications, already started.

Read the example of PORTER announcements on this page and if you are in a position to properly represent PORTER PRODUCTS let us hear from you by mail or wire.

Write

J. E. PORTER CO.,
8092 Guion St., Ottawa, Ill., U. S. A.

Please send me your Special Dealers' Proposition, terms, etc., with catalogs No. 61 and No. 62, covering the PORTER LINE, without obligation — FREE.

Name

Address

Town

State

How Camp Devens Was Built

(Continued from page 118.)

As fast as caulked the section was marked with its number according to the skeleton plumbing sketch for the type of building, as, "AA 9." All similar sections as fast as cut were deposited in the same imaginary bin between two stakes driven in the ground. The bins were arranged in order of building types and section numbers, all bins for sections of the same type buildings being placed in a row. When the truck driver wanted a type G building, he drove up to the G row, picked one section out of each of fifteen bins, all plainly marked, checked them up with his "G" material list, and drove off.

At one time the shops had 120 "buildings" all finished in bins on the ground.

The trucking was always done by the same chauffeurs, who had a standing assignment to the plumbing department and who knew something about plumbing. These men were selected for this because they could not only talk the vocabulary of the plumber, which is large and takes as long to learn as French, but had the plumbing sense, which is essential for the correct transfer of messages and avoidance of mistakes in sending requisitioned orders.

This manner of making up sections at the switch yard not only got work done in a swift and efficient way that would have to be done anyway, but did away with a vast number of mistakes in delivery to sites.

For instance, in the fifteen sections of a type G building, there are two or three hundred pieces of pipe and fittings. If the chauffeur had to pick these up from boxes and bins, he would inevitably make a multitude of mistakes which would at the building cause men to stand around waiting for them to be rectified. Moreover, while he was gathering this assortment, even in prepared boxes, his waiting truck would be idle.

The work of putting the pipe in was divided into three parts, for each of which there was a general foreman in charge and responsible—roughing, supplies and fixtures. Much of the roughing was done where the only other trace of a building at the time was a building number, stake and batter boards, perhaps with saplings, stumps and scrub still in the area included between the batter boards. There the plumbing erector had nothing to align with except the horizon, and there isn't even very much horizon at Ayer—not of the horizontal variety, at least—because the place is mostly hills. But when the carpenter foreman would arrive, he would find a stack of pipe sticking up all by its lonesome as far as the prospective second story.

The greatest discrepancy from the height of the building as compared with the plumbing thus put in was 1½ inches, but this was an exceptional case. Usually the work was about right.

(Continued to page 122.)

Our Free Plans Will Help You—

Meadows
TRADE MARK REGISTERED

Don't figure on any crib or granary without consulting our Free Plans. They will show you how to get greatest capacity at least expense by installing Meadows Inside Stationary Cup Elevators.

The most convenient and economical elevators, carrying small grain as well as ear corn.

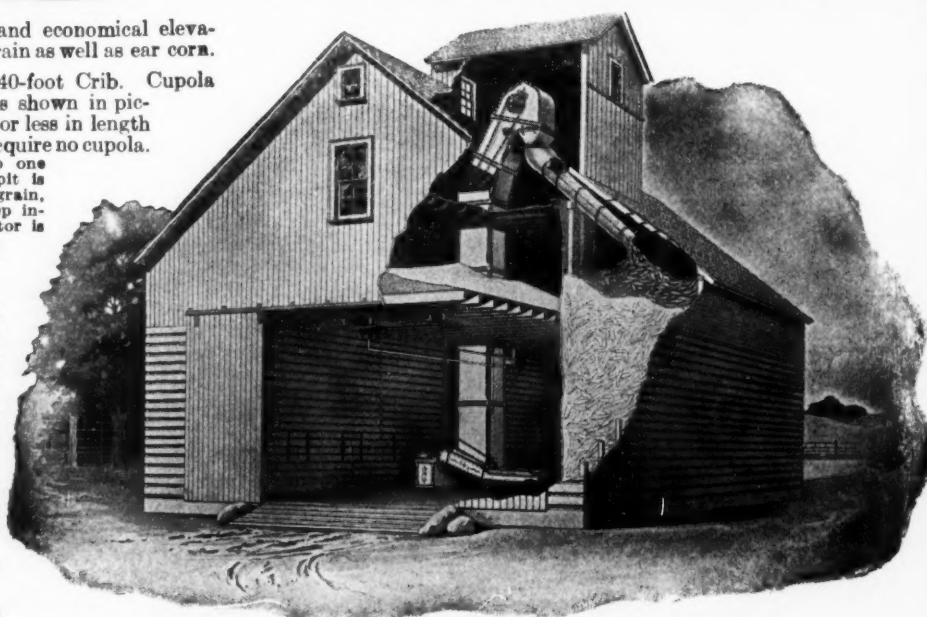
The picture shows a 40-foot Crib. Cupola need not be as large as shown in picture; the cribs 36 feet or less in length with half-pitch roofs require no cupola.

Elevator is confined to one side of driveway. No pit is necessary for dumping grain. Just a hole 16 inches deep in to which boot of elevator is set. The wagon jack is entirely overhead, fastened to the joists.

But write in today for our free Crib and Granary plans, catalogs and large posters telling all about our outfits and their application. Valuable information for the builder, and writing for it obligates you in no way.

**Meadows
Mfg. Co.**

Pontiac, Illinois





Cannon Ball Combination (Folding-Sliding) Garage Door Sets

The makers of the best known barn door hangers in America—the Cannon Ball—have added to this line a new garage door hanging which is unquestionably the most practical set for this purpose yet evolved.

Briefly the Cannon Ball Combination (Folding-Sliding) Garage Door Set fits any door opening up to $8\frac{1}{2}$ ft. and takes care of any thickness of door—makes them absolutely weather tight and secure against sagging. The doors fold inside requiring minimum space and are automatically held open by the heavy spring attached to the supporting track bracket. It is easy to install—neat in appearance—easy working and strong and substantial in use.

Comes packed in complete sets including Hangers, Track, Hinges, Floor and Ceiling Stops, Door Latch, Bolts, Screws, etc.

And the selling-helps put back of this new Cannon Ball item absolutely insure its rapid sale.

SEND FOR DETAILS OF THE
NEW CANNON BALL GARAGE SET

Hunt, Helm, Ferris & Co.

Main Office and Factory: 16 Hunt Street, Harvard, Ill.
Eastern Branch: Industrial Building, Albany, New York



Can the Garbage Can!!!

Can the garbage can ever
be a desirable feature in a
residence or apartment?

THE

KERNERATOR

The Built-In-the-Chimney

INCINERATOR SYSTEM

IS THE

**CLEANEST, QUICKEST and
CHEAPEST**

equipment for the complete and instantaneous
elimination of garbage and waste.

Cleanest—because the garbage is burned to cinders by a method that also renders the wastage odorless. Garbage cans and rubbish piles with their flies, vermin and the like are eliminated. All waste including tin cans, garbage, broken crockery—everything that is not wanted, disappears forever through the little door in the kitchen (shown in cut above).

Quickest—because as soon as waste accumulates it is placed in the hopper door shown above and falls down the flue to the incinerator in the basement.

Cheapest—because its first cost is its last. No commercial fuel is required. The garbage "consumes itself" when ignited, as there is plenty of paper, rags and other dry combustible material to burn and to dry out moisture in garbage, which, when dried, is readily combustible and burns to harmless ashes. Garbage haulage is eliminated.

Consider This, Mr. Contractor

Satisfied clients are your greatest asset. If you show them a way of eliminating all garbage and waste, without a penny of expense other than the nominal first cost, you will have solved for them one of their most disagreeable and annoying problems. No one wants garbage cans and waste piles around their homes. Here is a simple, efficient and economical method of eliminating these intolerable and unhealthful nuisances.

Your buildings will be more desirable than any others in your community. Your clients will be grateful.

Send for our two big books which describe the Kernerator completely and state what users have to say about them.

Address Dept. A

THE KERNER INCINERATOR CO.

592 Clinton Street, Milwaukee, Wis.

How Camp Devens Was Built

(Continued from page 120.)

The trench work on the water pipe was also subdivided. Of course, the digging of the trench fell not to the plumbing superintendent, but to the general superintendent of outside construction, or rather to his digging superintendent and foremen. Likewise, the work of closing in the trench later. But given the trench, three gangs of water supply pipers got busy. One gang laid long stretches of pipe line where everything was straight ahead, wholesale work by the hundred linear feet. If they ran into any difficulties, they would leave off work there and begin again beyond the difficult point. This gap would then be filled in by a second gang, who did nothing but this kind of work, which required a little finer technique. Anything which would interfere with the steady fast pace of the line layers was left to these rough trouble gangs. But even these did not touch the propositions requiring the finest work and judgment, as for instance at a difficult branch point. For this there was still a third group of the most expert workmen. Thus the best workmen did not waste their skill on "horse" work, nor did the poorer mechanics waste everybody else's time attempting things they could not do well.

In this manner it was possible oftentimes to lay a mile of pipe a day.

This speed was fostered by rivalry between the departments and gangs. Of course, they were all on the Ley payroll, and the great majority of the men in each group had never worked together before, but such was the spirit of the job, probably aided by its patriotic purpose, that each gang immediately developed an *esprit de corps*. For instance, in one place, Crowley's trench foreman had two days' start on the trenches. He therefore announced to the plumbers that he "had them tied to a post." The plumbers then broke away from said post, and were soon on the heels of the diggers. As soon as they left the post, Crowley's other gang of trench closers occupied it, and were soon on the heels of the plumbers. Then the three gangs went across the field like a local mixed train.

The speed maintained as a matter of routine both in laying mains and in roughing and other work, can be best illustrated in its practical effects and possibilities by a couple of instances. The cement foreman's reports were collected and delivered to him thru his office in such a way that at one time of the day they were four hours late. After one glance at the report, for he was an energetic man who believed that people worked better when there was pepper in the air, he would bawl the plumbing department out for not having the plumbing in certain buildings so that he could lay the cement floors of the lavatories. "The cement forms are all ready to be thrown into place," he might add. Then the plumbing superintendent would have the extreme pleasure of replying,

(Continued to page 124.)

WANTED! We Want 300 Agents at \$35 to \$70 a Week

NEW INVENTION—just out. Needed in every home every day. Patent just applied for. Nothing else like it. Supplies what every housewife has wished for for years. Perfected after long experimental work by mechanical experts. Low priced—anyone can use it—**sells on sight**. We want three hundred representatives at once—men or women hustlers—to advertise, accept orders and manage deliveries for our new **Quickedge Knife and Shear Sharpener**. Sharpens any kitchen knife, paring knife, carving knife, bread knife or shears and scissors in **ten seconds**. Agents are taking orders at every house—**wiring for rush shipments**. Write today for this opportunity to make \$10 to \$20 every day, over

\$300 Per Month

This little machine is a mechanical masterpiece. A child can use it. Just put knife in slot—turn crank—**grinds automatically**—draws blade to keen, sharp, perfect, lasting edge at **absolutely correct bevel for daily use**. Nothing to adjust—nothing to change, nothing to wear out or get out of order—**absolutely guaranteed**—will last for years. Once they see it and use it,

women will not do without it for ten times its cost. One agent wrote: "It was easier for me to learn to sell the **Quickedge** than it was to learn to tear open my pay envelope in my former dollar-a-day job." Get out of the dollar-a-day class. Get this position, where profits start the first day.

No Experience Required

Just take one of the machines to any house and show it—give a ten-second demonstration upon the dulllest knife in the house; **the order is yours right on the spot; instantly**. No talking necessary. No argument. The machine simply sells itself; **and stays sold**. Every customer becomes your friend. They tell others; your profits double and multiply. Leave one hundred on trial over night. Collect the cash for every one of them next day. **The machine will do its own talking**; it is so easy to operate, no explanations or instructions are necessary. Secure your county now; **free**. Get started right now and

Only
\$1.50
Selling Price

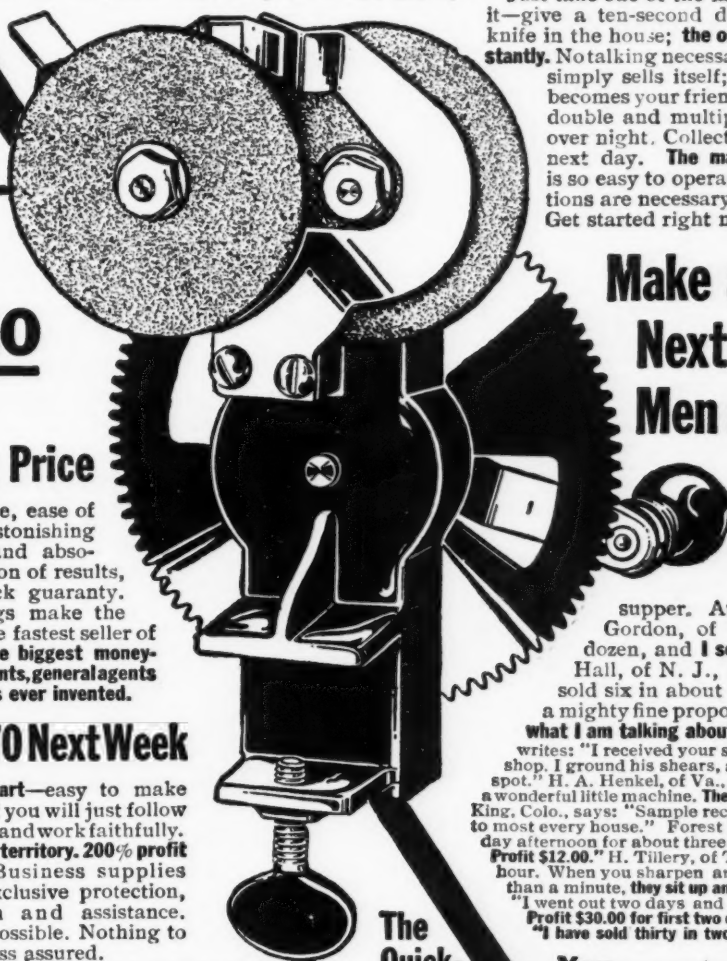
Low price, ease of operation, astonishing quickness and absolute perfection of results, money - back guaranty. These things make the **Quickedge** the fastest seller of the age—the **biggest money-maker for agents, general agents and managers ever invented**.

Make \$70 Next Week

Easy to start—easy to make big money if you will just follow instructions and work faithfully. **No charge for territory. 200% profit for agents**. Business supplies capital. Exclusive protection, co-operation and assistance. Failure impossible. Nothing to risk. Success assured.

Easy to demonstrate—and every woman is anxious to see it work—then she would not do without it. No talking necessary. Just show the machine and take the order—**one dollar profit on every call you make**.

Send for application blank and complete information today—**free**. Investigate. **Get the proof**. Don't delay. Write a postal card or letter right now. **Territory is being assigned very fast**. Get your county now—**free**. Write today.



The Quick-edge Knife and Shear Sharpener
Grinds Any Kitchen Knife or Shears
in 10 Seconds
Absolutely Guaranteed

Make as Much Money Next Week as These Men are Making Now

J. C. Lewis, of Kansas, says: "I have sold one hundred Sharpeners in four days." Hobart Kerr, of Md., writes: "The women can hardly wait till they get them." Herbert Cain, of Ky., sold nine after supper. At the end of his first day, J. W. Gordon, of Pa., writes: "I have sold two dozen, and I sold to everyone I saw." Wm. G. Hall, of N. J., says: "I think it is great. I sold six in about one-half hour. The machine is a mighty fine proposition. I am a mechanic, and I know what I am talking about." Peter Courtland, of Mich., writes: "I received your sharpener and opened it in a barber shop. I ground his shears, and I got an order for one right on the spot." H. A. Henkel, of Va., says: "I have examined it and find it a wonderful little machine. The workmanship is simply perfect." Frank King, Colo., says: "Sample received Saturday. Sold ten today. Sell to most every house." Forest Webb, of Pa., says: "Went out Monday afternoon for about three hours and received one dozen orders. Profit \$12.00." H. Tillery, of Tenn., wrote: "Took three orders first hour. When you sharpen an old dull knife, dull as a hoe, in less than a minute, they sit up and look." Ray Carter, of Mass., writes: "I went out two days and have orders for thirty sharpeners." Profit \$30.00 for first two days. John Durr, of Wis., also says: "I have sold thirty in two days."

You can make this money. Send now.
Territory free. Get busy.

WRITE TODAY

The Quickedge Sharpener Co.

No. 699 Sharpener Bldg.
217 N. Desplaines St., Chicago, Ill.

How Camp Devens was Built

(Continued from page 122.)

"Wake up, wake up, man! You're in the twentieth century. The plumbing in those buildings was all done an hour ago."

On another nearby building for an outside concern, not the Government, but contributing to the Government work at the camp, the architect one evening wanted the plumbing in as quickly as possible. This involved sixteen toilets, baths, and washbowls in proportion. From 7 p.m. to 7 a.m. the work was completed.

The plumbing work was, of course, kept co-ordinate with the carpenter and cement work. It was up to the plumbers to put in the underground work so as not to hold back the cement men. On the other hand, the plumbers were always ready to put in the supply pipes as soon as there were joists for the hangers.

In order to assign the work intelligently, foremen did two hours scout duty every evening, ahead of the work the men already had laid out for them. They then gave each man a list of the numbers of the buildings he was to work upon. They kept the men assigned to work enough for two days. In that way no man ever had to lose time hunting up the foreman, or waiting for him to come and assign the next job. This does not mean that a single man piped a whole house. Indeed, one man did nothing but drive screws, another put in grease traps, etc.

Daily reports of progress were sent in to General Manager Rogers and the home office of the Ley Company. These reports were divided into two parts—the number of buildings in which the rough plumbing had been installed, and the number in which all plumbing was complete to date. After laying preparations, in the first eight days of work, three hundred buildings were roughed in. Similarly in the first eight days of finish work two hundred and sixty buildings were completed. The roughing work normally had a lead on the finish work of about forty buildings. This lead was swiftly narrowed toward the completion date of the contract, and on the last day there was very little slack to take up either way.

The superintendent of plumbing, Mr. John J. Downey, with his assistants, was borrowed from the W. G. Cornell Co., plumbing contractors, of Boston. While the individual men were members of the Ley force and on the Ley payroll during the camp construction, and were always required to work in with the other departments for the common progress of the whole job rather than any one part of it, they still had a separate unit spirit and knew that the credit or responsibility for the plumbing part of the contract would leave the job with them when they rejoined the Cornell company. Thus it was to the Cornell men's permanent interest to have their organization get the fine results which they, in common with all the

(Continued to page 126.)

Comfort Indoor Closet Odorless Sanitary Germ-Proof No Sewer — No Waterworks — No Plumbing Needed

This modern home necessity is fast taking the place of the unsightly, unhealthy, inconvenient outhouse in the back yard. Thousands now in use and all giving complete satisfaction. Can be put wherever convenient in the house. No odor whatever. Gives city convenience in the country or town.

Abolish Outdoor Closet

Anybody can afford one. Saves those cold night trips out-of-doors. Impossible to get same amount of comfort for the money another way. Sold on 30 days' trial and under sworn guarantee to refund all money if not entirely satisfactory. Send for description and prices **today**. Be fair to your family.

Agents Make Big Money Easily

Comfort Indoor Closets sell themselves as fast as people understand about them. Contractors and carpenters are making big money by merely suggesting this closet. Write for details of this exclusive agency offer. Send postal **now** before somebody else gets your territory.

Comfort Chemical Closet Co.
311 Factories Bldg. TOLEDO, OHIO



Owners of 20-year-old roofs

Get together and compare notes!

To the original cost of your roof—**labor and material**—add the cost for **repairs**. Divide this by the number of years of service.

You will find that RU-BER-OID costs less per year than imitations.

Genuine RU-BER-OID contains no tar, sand, wood fibre, paper. And in addition to being leak-proof, RU-BER-OID is also sparkproof, rustproof and rotproof.

Many RU-BER-OID roofs have not cost one cent for repairs since they were laid more than 20 years ago.

Made in Slate Gray, Tile Red and Copper Green. Your dealer will show you samples and quote you prices.

THE STANDARD PAINT CO.
587 Woolworth Building, New York
BOSTON CHICAGO

Also makers of Ru-ber-oid Shingles and Impervite Waterproofing for Concrete



Pronounced "RU" as in RUBY
RU-BER-OID
ROOFING
COSTS MORE - WEARS LONGER

MADE BY THE STANDARD PAINT COMPANY, NEW YORK BOSTON CHICAGO
Look for the "Ru-ber-old Man" on every roll of genuine Ru-ber-old

WANTED—a man like Washburn

He made 200% profit in his second year!

WASHBURN LIVES in a little town alongside the Hudson. Three years ago he first heard of the Norwalk Vault. He lost no time scraping together \$450 and securing the agency for his county. Keeping his regular position, he worked his vault business nights and odd times.

WITHIN A YEAR his profits paid back his \$450 investment with a hundred dollars or so to spare. In his second year, he tells us, he cleared more than 200% profit. Since then he has been giving up his other work and putting his profits back into securing all the adjoining territory he can obtain. In a very few years he will have a big paying business of his own, and be independent for life.

Washburn started working outside his regular hours, without help, in a dark, low cellar. Now he has a fine new shop and plenty of help. While we are looking for men of his type—and believe his success shows what can be done under severe handicap—we would rather not have men that have to start as Washburn did. If he had had a going building business, for example, his profits would have been not only much quicker, but much bigger.

A MAN out in Michigan—for example—piled up in six years nearly 2000% profit. The Georgia Paving and Construction Company, down in Columbus, reports a 2000% increase in business in less than 10 years. The Los Angeles agent writes us that he finds from 200% to 300% greater profit in Norwalk Vaults than in any other sort of cement work.

DON'T GET the idea that the Norwalk Vault proposition is any "sure thing" or a get-rich-quick game. It is simply a thoroughly proven and tremendously profitable manufacturing line—preferably a side-line to begin with—for a practical man with energy and enterprise. For the man willing to work hard enough and able to put in a few hundred dollars, to get a fair start, the Norwalk Vault will give bigger and more certain returns than any other legitimate business we have ever heard of. This we know! It is no experiment.

FOR TEN years the Norwalk Vault Company has been doing business at the same place. Any bank or business house in Huron County can vouch for it. It has four vault factories of its own—one in Norwalk, one in Detroit, one in Plainfield, N. J., and one in New York City. As fast as more factories can be developed, the company will extend its own retail vault business. In the meantime, the company is assigning the manufacturing rights wherever it can find good men to represent it. More than 300 different agents are now building up the business, and more than half the United States has already been assigned to local manufacturers.

Who is making the Norwalk Vault in your territory? It would be interesting to find out how much more he would charge you now than he paid us a few years ago. The man who gets hold of a good piece of territory at present prices is lucky—for when it's once taken by somebody else, it's gone forever. Only one man can have it!

THE AVERAGE gain reported by local manufacturers of Norwalk Vaults throughout the United States equals 222% in about four years—a jump of around 50% for each year in business.

Undertakers everywhere are waking up to the fearful crudeness of the old way of burying without waterproof protection in the muddy bottom of a six foot cistern. In New York, especially, a change of sentiment has taken place; the leading undertakers are unanimous in praising the Norwalk. (We will be glad to send you a book of their letters.) And the same feeling is spreading rapidly all over the country. Part of the Norwalk's selling plan is thoroughly to make known the vault to the undertakers in your vicinity.

AS SOON as the public begins to realize the difference between the antiquated wooden box and the air-tight, moisture-proof, steel-and-cement Norwalk—the holders of the Norwalk Vault

franchise for any given district will find he has a mighty valuable possession. Only the other day the Philadelphia holders refused to sell for ten times what they originally paid.

OUR IDEA is to write several thousand local manufacturers all over the United States—each the best man in his own territory—and to develop a dozen or more districts of our own. Then we propose to make the idea of the cement burial case as thoroughly understood as the idea of a Pullman sleeping car, and the name "Norwalk Vault" as familiar as "Uneeda Biscuit." A long start—10 years of hard work—has already been made in this direction. The man who gets in now cashes in on both the past and the future.

READ THROUGH the advertisements in this or any other magazine and see if you can find any other proposition—PROVED BY TEN YEARS' GROWTH—that offers you half the opportunity this does. See if you can find any other article patented and trade-marked, with a sale based on as unchanging a thing as the human death rate, that you can develop exclusively in your own territory and cash in on as fast as the article becomes known to the public.

TWENTY LOCAL manufacturers selected at random from all over the United States, reported an average manufacturing cost of \$9.31 a vault, as against an average selling price of \$31.90—indicating a gross profit of \$22.59 per vault, or about 242%. THIS, HOWEVER, is a greater gross profit than we would care to predict in all cases these present days. Even so, being made chiefly of cement and sand, the Norwalk is affected less than most propositions.

ON THE other hand, the Norwalk proposition has an EXTRAORDINARY VALUE just now as a side line for any business that has been affected in any way by the War, either by slowing down of sales or by the rising costs of material, or difficulties of transportation, etc. And as an additional line for BUILDERS it is absolutely ideal; takes up comparatively little space, requires only spare time labor, no new sales or delivery expenses, and gives a wonderful straight lead to customers who may later buy monuments!

IF THE general idea appeals to you—write us about it. Tell us just exactly how you are situated; ask any questions you like—our sales and office force are paid to tell you just what you want no obligation on your part whatever.

So much of the United States has already been taken up that we are placing the remainder on one single, simple sales plan: The cost to you varies only with the size of the territory and amount of equipment desired; a small payment will be accepted and payments may be spread out over a whole year if desired. No more territory will be allowed any man than he has capital and energy to develop fully—your success is essential to ours.

MOREOVER, IF, after six months' fair trial, you find for any reason you do not care to continue, we will agree to allow you to cancel your contract and return your molds on what you will agree are fair and liberal terms. Could anything better illustrate our entire faith in the Norwalk proposition?

YOUR TERRITORY may not be taken yet—there are a lot of excellent districts still untouched. If you are interested and are really able to handle a proposition of this kind, don't hesitate because it is new to you. Somebody else may write while you are thinking about it. Put your name and address on the bottom margin of this page and mail at once. Or, if you prefer, write us what you want particularly to find out, and save time.

----- TEAR ALONG THIS LINE -----
THE NORWALK VAULT COMPANY, 71 Prospect St., Norwalk, O.

Please send particulars of your proposition as advertised in American Builder to name and address below:



Plate F-271-FA

The "Bevo" Built-in Lavatory

The New Product in

KOHLER WARE

Always of one quality—the highest

Here is a new pattern that you have been waiting for—a built-in lavatory that is a companion piece to the "Viceroy," America's foremost built-in-bath.

This new design builds into the wall of the bathroom and is of unsurpassed quality and beauty. The unbroken artistic lines please the eye. The KOHLER pure white enamel makes it easily cleaned. With the widely known KOHLER "Viceroy" bath, the original *one-piece* built-in bath, it offers an ideal bathroom combination.

"Bevo" Lavatories may be had with or without the pedestal.

Your customers will appreciate the "Bevo."

Our new book, "KOHLER OF KOHLER," illustrates and describes this new fixture. A postal will bring it to you.

KOHLER CO. Founded 1873 **Kohler, Wis.**

Boston New York Philadelphia Pittsburgh Detroit
Indianapolis Chicago St. Paul St. Louis Houston
San Francisco Los Angeles Seattle London

How Camp Devens Was Built

(Continued from page 124.)

other organizations at the camp, did get.

The heating was handled in the same way, by the contractor directly, but using F. A. Merrill, heating contractor, of Boston, as the general superintendent of heating, and having him bring along his usual executives.

The moment Assistant Superintendent Gay, of the pipe-cutting department got on the ground he requisitioned from his new co-employees in the carpenter department one pipe shop beside the railroad track, 30 to 60 feet. While it was going up he took a look around at the scope of the other work already in full swing at the camp, and immediately had the shop size increased to 60 by 70. That was one instance of the way in which the camp job made people expand. No matter how much a man had tried to magnify the size of the job in his own mind and multiply by factors of safety so that he would not be caught short or small in his preparations for the work he had to do there, his imagination always had to be multiplied again in the actual work.

It was soon found that since a car full of mixed sizes of pipe could be opposite only one stock pile at once, unloading involved either much carrying of heavy material from the car door to the proper pile, or tedious levering of the car along the track by hand. So the superintendent had his pipe piles moved back a few yards. Then in the cleared space he asked the construction department to lay an additional railroad track—not a regular one, such as the rest of the yard had, level and true to line, with good ballast—but just ties thrown on the ground and rails laid along them to look like a track and have no humps quite as bad as a camel's back. The construction superintendent obliged. The pipe shop man then obtained from the purchasing department an ordinary railroad hand car truck, which he deposited on his rails. These rails do not join the regular switch tracks, but like the rivers of India, arise in the sand and end in the sand. But they parallel the railroad track on one hand and the stock piles on the other, so the truck, which is, of course, heavy enough to take a good load at a time, can be pushed from opposite the car door to the proper unloading point for the particular kinds of material on it.

The piping is piled at right angles to the track. The piles are located near the proper sizes of machines. The roof of the shop is built out over the inner ends of the stock piles, being held up by posts. The shop has no wall on the side toward the railroad and storage piles. The men can therefore reach out a few feet, and draw the pipe lengths in wherever wanted. The extended roof half way over the piles enables them to keep dry in wet weather. The pipe shop proper is distinguished by a wooden floor, which is much better to work on and is therefore a tool of production.

(To be Concluded in the December American Builder.)

WANTED**A CARPENTER
AGENT
IN EACH COUNTY****\$1800 to \$5000 This Year**

We want a capable representative in every locality. You are peculiarly fitted for this opportunity. You can make a big success of this business and a tremendous profit in proportion to the time you put in on it. **The possibilities are unlimited.** This is a business of real, hard cash opportunity. No experience is required. No expense. No risk. No competition. Just follow easy instructions—work all or spare time—handle the cash yourself and take a profit that will make you sit up and take notice. One carpenter sold nine closets in three hours—**profit \$72.00 cash.** Act today. Investigate. Send for complete free information. Risk a stamp for a man's size opportunity—and take this profit for a new bank account.

**Amazing New Home Invention
The Shafer Ventilated Chemical Indoor Closet**

No plumbing—no waterworks—no cesspool. Banishes the outdoor closet. Revolutionizes living conditions in country and village homes. Solves the one humiliating and perplexing country home problem. An imperative necessity to health, comfort and convenience. Perfected for his own use after years of experimental work by a heating and ventilating engineer. **Tested in over 2000 homes for three years.** Now offered to the homes of the world at a nominal price. Gives positive guaranteed satisfaction. Demanded everywhere. A sale at every home. Warranted for ten years. **Absolutely odorless, sanitary, germ proof.** Endorsed by physicians' health authorities, schools and thousands of homes. Every day we receive letters such as the following: "I have observed many of them in highly successful operation. In my private practice I unhesitatingly and continually recommend them. I wish these closets were in every home."—Dr. Thomas H. Turner (Health Officer). "I recommend the Shafer Closet in every home as a necessity and as a duty to public health."—Dr. D. B. Henry. "It is a complete success—a splendid invention of great practical use."—O. M. Misenar, (Supt. of Schools). "Every home that would put one in and use it for a week would never let it get out of the house."—Arthur B. Ransom (Farmer)

\$112 Cash Profit in One Day

That's the record of one man (a plumber) in a single day. The same man has never sold less than five Closets for any half day's work. Every home a prospect. Every sale makes dollars—not pennies—of cash profit. **Liberal commission to agents.** Biggest money-making opportunity ever offered, because it is an invention that is positively needed in every home not supplied with water-works and sewage system. Listen: L. J. Dulle, Mo., (Insurance Agent) says: "This is an easy thing to sell. Everybody you go to and talk Closet to has another prospect for you." C. A. Carter, Ill., (former Grain Dealer) says: "I was out today two hours and sold three. Find enclosed check. Ship me twelve at once." W. H. Bartholomew, Wash., (Farmer) says: "Closets arrived yesterday. Sold one in 15 minutes." Seymour L. Vance, N. Y., (Carpenter) says: "I sold nine the first three hours." W. D. Belknap, Ohio (former Real Estate Agent) wired: "Sold ten Closets today—send twelve by express." Do you want more proof of success and profit? Send today for free illustrated book showing pictures of homes and rooms containing this wonderful device, complete description, color plates, letters of endorsement from health authorities, doctors, editors and scores of users with names and addresses. This book is free—send for it today—investigate.

**SEND NO MONEY—
AGENT'S OUTFIT FREE**

Start right now. Order book, business cards and prospectus with exclusive agency contract **FREE.** Co-operation, advertising, assistance. **Business supplies capital.** We teach you how to make amazing success. Permanent business—all or spare time. Secure your county under exclusive agency contract now—**free.** Don't delay. Write us a letter or postal card, giving your name, address, and the name of your county, and mail it today. No previous experience necessary or required. You can make this success. Your profits will start the first day. Make \$40 a week to \$5000 a year commencing NOW. Risk a stamp to get complete, proved, reliable free information. This is your part—**DO IT RIGHT NOW.**



Chemicals, which are furnished with the closet, and air currents do the work, automatically.

Price Complete Only
\$17.50

The Shafer Mfg. Co.,490 Colton Building
TOLEDO, OHIO

Reinforcing Masonry

(Continued from page 87.)

the amount of give will depend directly upon and be in proportion to the force applied. Many materials are quite elastic up to certain pressures, which is spoken of as their elastic limits, and then they either change their shape permanently or break or crush as the case may be. For instance, in bending a piece of mild steel it will bend a certain amount and spring back if permitted to do so, but if bent too far it takes a permanent set.

With concrete or brick or blocks the material when compressed in a testing machine will give an appreciable amount, and if permitted will come right back to its original size; but it will not change its shape permanently without breaking. That is when it gets past the elastic limit it breaks, generally making a loud noise.

It is often said that lumber will bend so as to give warning as to whether or not it is going to break and that masonry or fireproof structure will not. The facts are that masonry does bend enough to tell the story. It is considered safe for a slab to bend one fifteen-hundredth part of the span. This is easily measured, as it would be one one-hundredth of a foot on a 15-foot span or, roughly, $\frac{1}{8}$ of an inch.

✱
GENIUS is an infinite capacity for taking pains; and the world has an infinite capacity for giving them.

Alcohol From Sawdust

A PROCESS for producing alcohol from sawdust is offered by the Forest Products Laboratory, Madison, Wis. One ton of dry sawdust worth not more than 50 cents a ton will product 15 to 25 gallons of 190-proof spirit. A plant large enough to distill 2,500 to 3,000 gallons daily can make alcohol at a cost of 14 to 20 cents a gallon, according to this laboratory's estimate.

✱ Implement Sheds

(Continued from page 83.)

"The sizes of lumber needed for an ordinary implement shed will vary from 2 by 4 inches or 2 by 6 inches for the studs, rafters and truss work up to 6 by 6 inches for the posts supporting the roof trusses, and 6 by 8 inches for purlins between trusses.

"A floor may be put in it if is desired, altho it is not necessary. If a concrete floor is used, the construction and the proportions of the materials used for concrete may be the same described in our talks on swine houses and poultry houses.

"The foundations should be of concrete mixed in the proportion of one part portland cement, $2\frac{1}{2}$ parts sand, and 5 parts crushed stone, or screened gravel. They need not be large, as no heavy loads are to be carried. Ordinarily a footing 12 to 16 inches wide and 10 inches thick will be sufficient. It should extend

(Continued to page 130.)

VELVET!!—right at your door!

*—for instance, thousands of saloons
are being remodeled for merchants*

and thousands of landlords are improving their land with *only one-story* structures, because of the *high cost* of building, but they must all "put up the front."

Do you want to be the Brasco store-front man in your community?

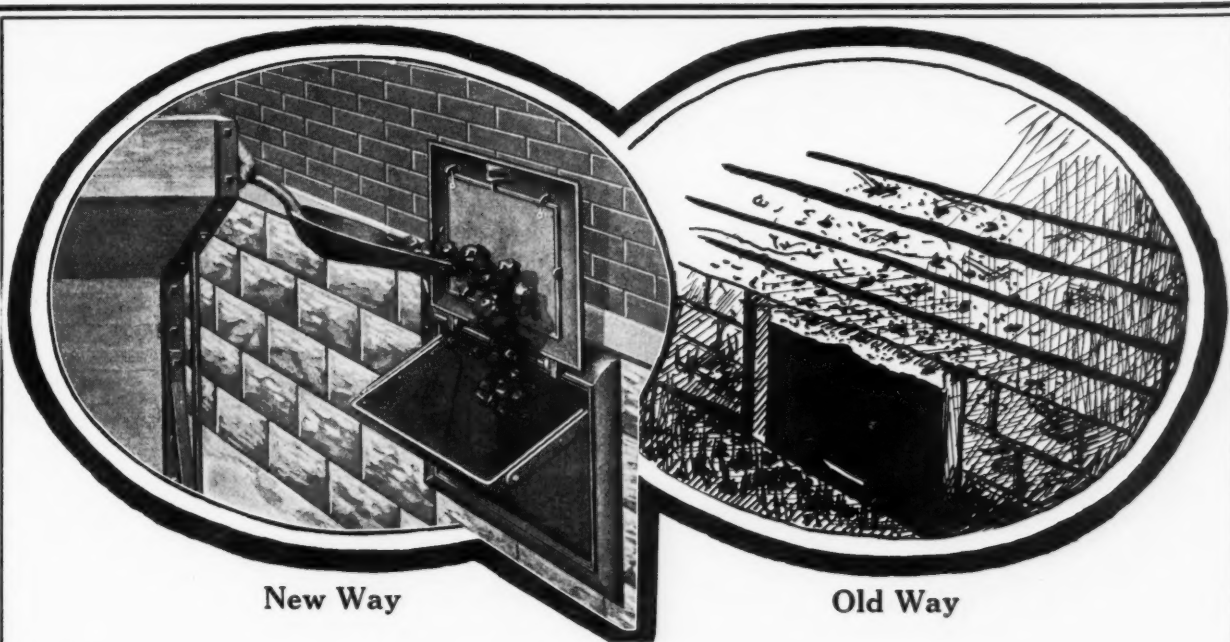
Brasco copper store fronts will give you the edge on every job, both as to mechanical merit and price.

*Write us for an estimate on work you
are figuring, or expect to figure. It
may land the general contract for you.*

Brasco Manufacturing Co.
1455 S. Michigan Avenue, Chicago

Send for your copy of this valuable detail portfolio **FREE**





New Way

Old Way

Here is a Field Nobody Controls

Big money made easily by installing Majestic Coal Chutes. One order brings another. Their orders lead to other repair jobs, so this is a live proposition for **any** man.

These are facts—proven by the best men. And you, what are you going to do about it? Are you to make your share of this money now? Of **course** you are.

The winter coal is being put in now and the coal bin window is brought again to attention. The coal bin window is usually the most neglected portion of the home. The window may be broken, the paint around scratched and dirty from coal—the frame “out of square.” The owner probably knows of this condition and may be thinking of having it repaired.

But suppose you get on the job and sell him the Majestic Coal Chute, and thus bring profit to yourself during the dull winter months.

These, with other metal specialties as Built-in Garbage Receivers, Milk and Package Receivers, Rubbish Burners, Duplex One-Register Store Heating Systems, Pipe and Pipeless Furnaces, etc., offers big, profitable activity for you this winter. Write us today. Cut out the coupon.



MAJESTIC CO.

702 Erie Street Huntington, Ind.

Use the Majestic Duplex Heating System. Gives more heat and costs one-third less than old-fashioned methods. It takes up very small space in the cellar and does not heat up cellar. All heat goes to rooms upstairs.

Gentlemen: Please send information.
Name.....
Address.....
City.....

Roofing Slate Service that YOU need

We can make immediate shipments in any quantity—in any size—in any quality of

**Genuine Bangor
Albion Bangor
Jackson Bangor
No. 1 Pen Argyl**

**Slatington Big Bed
Washington Big Bed
Trout Creek Big Bed
Franklin Big Bed**

The various qualities of Roofing Slate quoted above are the product of the quarries of the following companies and are sold *exclusively* through the Vendor Slate Company.

GENUINE BANGOR

Genuine Bangor Slate Co.

Old Bangor Quarry
American Bangor Quarry
Bangor Excelsior Quarry
Star Quarry
Royal Quarry

North Bangor Slate Company

North Bangor Quarry
Bangor Washington Quarry

Bangor Quarry Company

Bangor Union Quarry

East Bangor Consolidated Slate Co.

• East Bangor Consolidated Quarry

Bangor Central Slate Company

Bangor Central Quarries

Bangor Supreme Slate Company

Grand Central Quarries

New Bangor Valley Slate Company

New Bangor Valley Quarries

Bangorvein Slate Company

Peerless Quarries

ALBION OR JACKSON BANGOR

Jackson Bangor Slate Company

United States Quarry
Valley Quarries
No. 5 and 6 Jackson Bangor Quarries

Albion Vein Slate Company

Stoddard Quarries

Genuine Bangor Slate Company

Albion Quarries

M. L. Tinsman Slate Company

Tinsman Quarries

PEN ARGYL No. 1

Hercules Slate Company

Hercules Quarries

Hammann Slate Company

Northampton Quarries

Shimer Slate Company

Alpha Quarries

SLATINGTON BIG BED

WASHINGTON BIG BED

FRANKLIN BIG BED

TROUT CREEK BIG BED

Provident Slate Co.

Genuine Washington Slate Co.

Genuine Franklin Slate Co.

Prudential Slate Co.

Washington Slate Co.

Trout Creek Slate Co.

Blue Mountain Slate Co.

Blue Valley Slate Mfg. Co.

Custard Slate Co.

Carbon Slate Co.

Thomas Slate Co.

Ellis Owens Slate Co.

Lobb, Parry & Co.

Henry Quarries Co.

Royal Blue Slate Co.

Highland Slate Co.

Manhattan Slate Co.

Roberts Bros.

Blue Vein Slate Co.

Ellis Owens Sons Slate Co.

Pennsylvania Slate Co.

We are the largest shippers of Roofing Slate in the World



VENDOR SLATE CO.
INCORPORATED
EASTON, PENNSYLVANIA



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Implement Sheds

(Continued from page 130.)

"The plate or support over the door must be strong enough to hold the load which comes from the roof to that part of the wall without allowing any appreciable sag. A sagging plate will make trouble in handling the doors. Often a small truss is used, consisting of a 4 by 6-inch horizontal plate over the door and strengthened by two slanting 4 by 6-inch pieces meeting over the center of the doorway. A $\frac{5}{8}$ -inch diameter iron tie rod passes from the junction of the two slanting pieces downward to the center of the horizontal member. This rod is fitted with nuts and washers where it passes thru the wood. The slant of the top pieces should not be less than $2\frac{1}{2}$ inches to the foot.

"A simple shed type of building is shown in Figs. 5A, B and C. The framing of this building consists of 6 by 6-inch posts placed 8 feet on centers. The plates and sills are 2 by 6-inch stock doubled. The studding is 2 by 4-inch stock and the rafters are 2 by 6-inch. Other dimensions of the building are shown in the illustrations.

"Figures 5D, E and F show an open type of shed. The framing consists of 6 by 6-inch posts resting on concrete piers spaced about 9 feet apart. These piers are 1 foot 4 inches square in section below the ground and extend down to a depth of 3 feet 6 inches. The top part of the pier tapers from the ground upwards to a width of about 10 inches. The roof is supported by 2 by 6-inch rafters spaced 2 feet apart on centers."

SLATE WE HAVE WHAT YOU WANT

In Roofing Slate, Slate Blackboards
Structural and Plumbers' Slate

SATISFACTION GUARANTEED in QUALITY and PRICE

Ask for Delivered Prices

J. K. HOWER Station **Danielsville, Pa.**

R. J. KICHLINE, Sales Agent

ROOF SLATE

Of every kind. Black—also the varying delicate shadings and rich tones of Red, Green and Purple—clear and in mottled effects.

Structural Slate — Slate Blackboards

E. J. JOHNSON, Inc.

Quarriers of Slate

West 44th Street, NEW YORK

A Serving Pantry

(Continued from page 74.)

the end in the corner are splayed to place their contents within easy reach and to admit more light into the room. The doors to the upper part of the cases are provided with muntins for small lights of glass, making a stiff door with glass of a size inexpensive to replace in case of breakage. A generous supply of drawers of varied sizes furnishes a stow-away for all kinds of supplies and kitchen utensils.

At the end of the pantry the lower part of the case is provided with two large doors the backs of which are fitted with retaining trays or shelves. They are simply made, with trays of two different depths for cans and boxes of several sizes. The bottom tray is supported at the ends with metal brackets and the others are held in position above with small corner supports. Narrow horizontal strips across front of each tray prevent things from falling out. Some housekeepers prefer one deep tray at the top with two slats across the front instead of the two as shown. The shelves which fit in the back of the door are useful for supplies and canned goods which do not need to be reached so frequently.



The Builder as a Fireguard

(Continued from page 76.)

troublesome in case of fire. It is a common occurrence for a fire in a row of buildings to communicate to other buildings thru cornices and eaves. They are usually dry on the under side. The wood has shrunk and cracks or small open joints exist. Go up in your attic sometimes and see the narrow white streaks of light thru the cracks. Eaves and cornices form a natural place for the fire and heat to collect. They burn freely and a fire travels thru them rapidly. The incombustible filler where shown between the joists prevents the fire from passing upward. The $\frac{7}{8}$ -inch board holds the filler in place.

Figures 5 and 8 are instances of how a fire in a partition may be prevented from passing up from the floor below. In wooden construction there are places where a floor is laid over a brick partition. Two cases

(Continued to page 134.)

For the outer covering of
a building no other wood
gives such long and satis-
factory service as

WHITE PINE

Over Three Thousand Years Ago—

The builders of Babylon and Egypt used Asphalt Roofing.

Twenty-Six Years Ago—

some builders started using
Monarch Asphalt Roofing

To-day and To-morrow—

Those same builders are using
Monarch Asphalt Shingles

Write us for samples of literature and join the Monarch family.



STOWELL MFG. CO.,

42 Culver Avenue

Jersey City, N. J.

ROOFING SLATE

"they were represented to be as good as GFT slate but after we used them we know POSITIVELY that they were NOT AS REPRESENTED. Hereafter we will use GFT slate. We are done with 'Just as Good' brands." This is the experience of all who buy UNKNOWN brands of roofing. Insist on GFT slate. They are the best and cheapest in the end. Price List and Catalogue on request.
Sole Manufacturers
Slatington Slate Co.
Slatington, Pa.

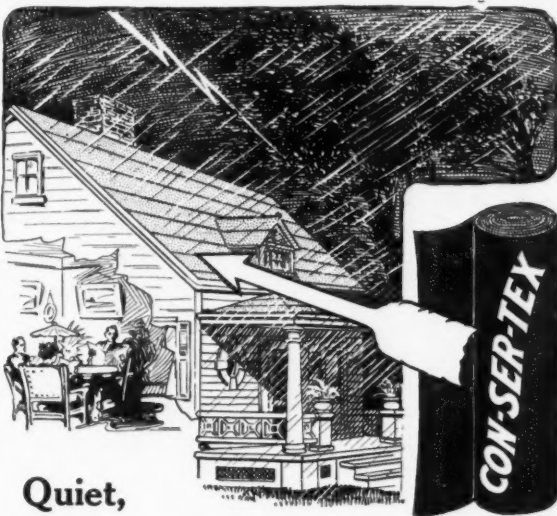


The Roof of Eternal Youth

SHELDON'S
RED, GREEN, PURPLE, BLACK
SLATES

Custom made to "fit" your Roof. A wide choice of distinctive Color Combinations. Quality, Price and Service unequalled.

F. C. Sheldon Slate Co., Granville, New York



Quiet,

Comfortable and Cozy

within, although the storm rages without

CON-SER-TEX is a specially treated high grade cotton fabric particularly well adapted for roofing and porch covering. It will not stretch, crack nor blister. No more noise and rattle when the elements let loose. No more leaky spots nor repair bills after the storm has passed. CON-SER-TEX preserves the coziness and safety of the home during the storm.

Every carpenter, builder and owner should send for our new illustrated booklet, "Roofing Facts and Figures." It proves the many advantages of "CON-SER-TEX" Canvas Roofing.

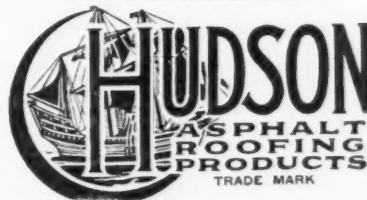
WILLIAM L. BARRELL & CO.

8 Thomas Street New York City

CHICAGO DISTRIBUTOR
Geo. B. Carpenter & Co., 430-40 Wells Street
CALIFORNIA DISTRIBUTORS
Waterhouse & Price Co., Los Angeles
The Pacific Building Material Co., San Francisco

WE ARE NOT DEPENDENT UPON GERMANY FOR COLORING MATERIALS

Used in the Manufacture of



FOR ANY KIND OF BUILDING

☐ Hudson Asphalt Shingles

Mineral Surfaced Red, Green Mottled furnished in Individual Shingles 8x12 1/4 inches and in strips 10x40 inches with 5 shingles to a strip. Hudson Strip Shingles can be very quickly laid.

☐ Protection Brand Roofing

Mineral Surfaced; has 6-inch lap. (Pat. Nov. 18, 1902.) Laid with all nails covered. Joints absolutely tight.

The mineral Surfaces used in the manufacture of Hudson Shingles and Protection Roofing are in their natural unfaded colors. No artificial coloring used.

☐ Hudson Brand Asphalt Felts

For built-up roofs. For sheathing buildings and reinforcing slate and tile roofs. You will like Hudson Felt. It is pliable will not dry up or crack, as it does not stick at the butts. You can use every inch of it.

ASPHALT READY ROOFING CO.

9 Church Street Dept. 453

New York

Cut out this advertisement and put an X in the ☐ alongside of the material you are interested in. Mail it to us and we will gladly send samples.

Name

Address

The Builder as a Fireguard

(Continued from page 132.)

of this kind are shown in Figures 6 and 9. If a course of brickwork resting on the foundation wall is built up between the joists and fitted snugly against the underside of the floor—and at the ends of the joists as might be done in Fig. 3—it is likely to deform the floor when the timber shrinks. Wooden fire-stopping, or a compressible material such as mineral wool should be used to prevent the floor from bulging in the course of time.

If it seems that these suggestions are merely an unnecessary expense ask your insurance agent what he thinks of them.



Wooden Shingles and "Winter Dollars"

(Continued from page 59.)

negligible. Winter shingling need in no way disturb the warmth, convenience or comfort of the occupants of the home.

To assist a contractor, carpenter, or lumber dealer in "landing" such jobs, some "close-up" views of beautiful homes having shingle sides should be obtained, and as a forceful contrast, pictures showing homes that are badly in need of paint, or that are not aesthetically appealing.

In the smaller towns that do not have the convenience of modern water supply, and where the course of "aqua pura" is still the garden well, artistic well shelters of wooden shingles will be found to be quite

a salable feature, and one that can be put up at a neat margin of profit to the carpenter-contractor-retailer.

There are a great many "Winter Dollars" waiting for the man who will take the trouble to put these ideas before the residents of his town, especially at a time when major building is not being done. The aggregate of such opportunities will be found quite surprising, and one will find the wooden shingle a valuable partner in his pursuit of these "Winter Dollars."



Oak Flooring and Retail Dealer

(Continued from page 58.)

this kind keep the stock fresh and bright, and in the proper condition for delivery to the jobs. A retail lumber dealer who keeps the stock properly housed in all kinds of weather generally enjoys a far better trade than his brother dealer who is careless about the housing of oak flooring.

Not very long ago in Chicago an owner of a large apartment building made complaint on account of large crevices appearing. They were so numerous and large that they were indeed very unsightly. The flooring, from all appearance, had been properly laid, filled and finished, but after examination at the retail lumber yard where the stock came from, it was found that the oak flooring was exposed on both ends to the weather, and upon measuring same it was found that

(Continued to page 136.)

Just the Thing for Emergency Jobs

PARTITIONS are needed quick—an attic or basement must be lined in a day—shelving put up over night—a store or window display background or booth completed in a few hours—a theatre remodeled or a whole house lined in a few days.

"Hurry-up" jobs like these usually pay good profits. You can "deliver" by using



It's the only wall board with the wood core—can be worked quick and easy. It saws straight and smooth, is light in weight, but very strong and durable. It is not affected by dampness or other weather conditions—does not warp or shrink.

Be sure you get the genuine—with the wood core—sold by dealers in strips 4 feet wide by one to 18 feet long.

Write for sample and interesting booklet.

The Compo-Board Co.,
5777 Lyndale Ave. N.,
Minneapolis - Minnesota



Fiberlic

Wall

Board

Fiberlic

Wood Grain

Panels

The material from which it is made, the fact that the pulp is chemically cleansed and that the *fiber lengths* give the finished product that *natural reinforcement* that is lacking in ground wood boards, is in itself a guarantee of the superiority of Fiberlic from strong, permanent, economical and sanitary construction.

MacAndrews & Forbes Company
200 Fifth Avenue, New York City
Factory: Camden, N. J.



Walls and Ceilings as Permanent as Woodwork and Hardwood Floors

Who ever thinks of changing woodwork and hardwood floors?

Why not give walls and ceilings the same degree of permanency? Build them of knotless, crackless, manufactured lumber—Beaver Board—and have the job done for all time.

You can't expect Beaver Board results unless this trademark is on the back of the board you buy.

Let us tell you about our Department of Design and Decoration—a service for carpenters and contractors. It's free.

THE BEAVER BOARD COMPANIES
141 Beaver Road
Buffalo, N. Y.
Distributors in principal cities. Dealers everywhere

BEAVER BOARD

FOR BETTER WALLS & CEILINGS

**EASIER
QUICKER
CHEAPER
CLEANER**

**MORE
PROFIT
FOR
YOU**

Takes the place
of plaster for
all Walls and for
Ceilings.

WRITE FOR SAMPLES

**THE PHILIP
CAREY COMPANY**
1021 Wayne Ave.
Cincinnati, Ohio.

PLASTERGON WALL BOARD

Assures Steady Work and Big Profits

That's what every contractor, carpenter and builder is looking for—and that's just where Plastergon Wall Board comes in.

There isn't a home that can't be improved by the use of Plastergon and the opportunity of securing contracts is unlimited. Our free service department will gladly furnish plans, literature and other matter that will create a demand for Plastergon every time—and every finished Plastergon job is a boost for new business.

You save from \$4 to \$6 per thousand feet, because we size Plastergon before it leaves the factory. Plastergon Wall Board is water-proof, warp-proof and twist-proof and gives absolute satisfaction.

Write for particulars.

PLASTERGON WALL BOARD CO.
201 Philadelphia Ave., Buffalo, N. Y.

Oak Flooring and Retail Dealer

(Continued from page 134.)

practically all pieces measured fully 1/16 inch on the face over the standard measurement. This condition ran from the end in about two feet. When all the facts were brought out the owner compelled the contractor, as well as the dealer, to compensate him for the abused condition of the floor.

There are many retail lumber dealers that are offering splendid service to the contractors along the line of the proper handling and caring for it after it leaves the retail yards. A good plan, if the period is in winter, is to have the oak flooring stock kept in a dry room in the building, with steam heat, for about ten days before starting to lay. This treatment will keep the stock in normal condition, and the result will be less complaints from the architect or the owner.

Another case in St. Louis, Mo., last spring was where about 3,000 feet of oak flooring was laid in a beautiful home in Forest Park. The owner made complaint to the architect on account of the number of unsightly cracks appearing mostly toward the ends. The architect took the matter up with the contractor, and they placed the matter before the dealer, and the dealer contended that it was the fault of the manufacturer of the stock at the mill where it was made. An expert was called in upon the case, and in a very short time the fact was brought out that the retail lumber dealer was housing the oak flooring in a build-

ing entirely unsuitable for the storage of oak flooring. The building had three sides open, allowing the rain to wet both ends, swelling the flooring about 1/6 inch from the original manufacture. The contractor, instead of keeping the oak flooring in a dry place in the house for at least ten days before it was laid, laid the stock as soon as he received it from the dealer. In this case the architect and the owner agreed that the direct trouble with the floor was in the abuse of the oak flooring by the improper housing given it by the retailer. They also reprimanded the contractor for laying the floor in the condition in which it was received.

Atmospheric conditions peculiarly affect oak flooring thruout the entire season, and with this in mind it surely would pay the retail lumber dealer to give it more care so that when his customer calls for it for laying it will be in the proper condition for immediate use.

When you consider that oak flooring after being laid is supposed to last a lifetime, it would appear very unreasonable on the part of some retail lumber dealers and contractors to abuse the flooring by improper housing, handling, as well as laying. The general tendency today is too much toward quantity and too little regard for high-class workmanship.

It would be well for all dealers and contractors to remember that oak flooring is like a sponge, in that it has been thoroly kiln dried and all the dampness

(Continued to page 138.)

Beautiful Oak Floors



Oak Floors are the only floors that combine *beauty, durability and distinctiveness*, three very vital reasons why so much *Oak Flooring* is in use today.

Oak Floors are always the source of *unlimited satisfaction and pride*. Nothing is prettier, or more artistic than *floors of Oak* and a few choice rugs.

Oak Floors mean *better selling and renting values*, and it attracts a *better class of tenants*.

More Winter Work for the Carpenters

Three-eighths inch Oak Flooring offers an *excellent* side-line for *carpenters or contractors* during the winter season. It can be laid over old pine floors in old houses at a *very low cost*. All that is necessary to secure jobs is some *soliciting*. Every woman wants *Oak Floors* as *beautiful Oak Floors* and rugs simplify housekeeping and house-cleaning.

Three-eighths inch Oak Flooring can be laid successfully by any carpenter or handy man. The work is very *agreeable* and very *profitable*.

Write for folders that tell all that is worth knowing about *Oak Flooring*.

All good lumber dealers sell Oak Flooring

OAK FLOORING SERVICE BUREAU

1603 Union Trust Bldg.

Cincinnati, Ohio

BAYONNE ROOF AND DECK CLOTH

The PERFECT MATERIAL

BAYONNE Roof and Deck Cloth contains all the advantages found in other materials and eliminates their disadvantages.

BAYONNE is Wear and Weather-proof. It is impervious to the elements; it will stand constant walking upon.

BAYONNE is easy to lay. Saves paint, time and labor. Is laid on dry boards and painted afterwards to conform to any desired color scheme.


BAYONNE will not crack, peel or scale. Always retains its smooth, neat appearance. Can be kept perfectly clean by sluicing with water, like cement.

Satisfaction is assured when **Bayonne** is used. Specify it to be certain of the job measuring up to your high standards.

Let us send you our Sample Book N and booklet giving opinions of builders. We feel certain you will find them most interesting to peruse.

JOHN BOYLE & CO., Inc.
112-114 Duane Street, 70-72 Reade Street, New York City
St. Louis Branch—202-204 Market Street

for SUN PARLORS, PLAZZA FLOORS and ROOFS



USE Cornell Wood-Board for Walls, Ceilings, Partitions

This superior wallboard is the ideal material for walls and ceilings of HOMES, STORES, OFFICES, SCHOOLS, CHURCHES, THEATRES, GARAGES, FARM BUILDINGS, REPAIRS AND ALTERATIONS and for a HUNDRED DIFFERENT EMERGENCY USES.

Write for a large sample and complete information.

CORNELL WOOD PRODUCTS CO.

C. O. FRISBIE, Pres.

Dept. T-3, 173-175 W. Jackson Blvd., Chicago



Your Reputation Demands

UPSON PROCESSED BOARD

---the Most Dependable Wall Board

Made in America

Contains no dirty, black materials or cheap, punky "jack pine" fibers.

Write for Samples and Information

THE UPSON CO. Fiber Board Authorities 16 Upson Point, Lockport, N. Y.

LOOK FOR THE FAMOUS BLUE CENTER

YOU CAN BUILD A

Grandfather's Clock

LIKE THIS FOR

\$25

Turn Your Spare Time This Winter to Good Profit Building Grandfather's Clocks With Our Help—Anyone Can Do It

You need not be a cabinet maker to do it, for the cases come to you complete in the knock-down, ready for assembly. If you are at all handy with tools, you can produce as beautiful a clock for \$25 as you will find in retail stores at \$75 and over. Thousands of people are building Grandfather's Clocks with our help and are making big profits. Why not you?

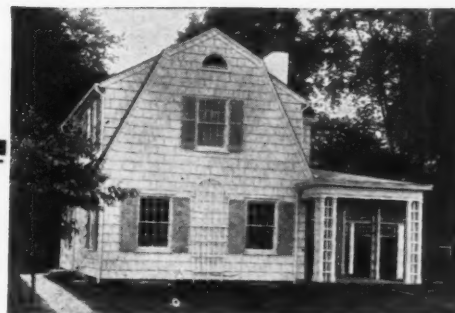
Complete Works \$5

We provide you with blue prints, finishing material and instructions. The work is easy and fascinating.

Write for Free Offer

Also our catalog. You will be greatly interested in what we send you.

CLOCK COMPANY
77 Ruffner St., Philadelphia, Pa.

Archts. R. C. Hunter & Bro., Englewood, N. J.
for Chas. E. Smith, Englewood, N. J.

This Little Gem

of Architecture made possible by the use of the famous 24-inch "DIXIE-WHITE"

"CREO-DIPT" STAINED SHINGLES

on the side walls and the artistic harmony of 18-inch dark green "CREO-DIPT" Stained Shingles on roof.

Send for our beautiful book. It explains many remarkable examples in the use of "CREO-DIPT" Stained Shingles.

Also ask about "Thatched Effects" and 24-inch "CREO-DIPT" hand split Cypress.

CREO-DIPT COMPANY, Inc.

1028 Oliver St., No. Tonawanda, N. Y.

Factory in Chicago for West

Oak Flooring and Retail Dealer

(Continued from page 136.)

extracted. It will absorb moisture if exposed to any dampness for any length of time. A little extra attention in caring for the flooring before it is laid means years of satisfactory service. Carelessness in handling oak flooring means extra work for the floor layer, and permanent dissatisfaction for the home owner.

The manufacturers of oak flooring have been doing some excellent educational work during the last ten years, and have distributed millions of booklets and folders over the entire United States. This literature tells all that is worth knowing about oak flooring, from the mill where it is made, to the finished floor after being laid, filled and finished. This national advertising campaign is of direct assistance to the retail lumber dealers. The manufacturers of oak flooring have standardized the grades, thicknesses, as well as the size of the tongue and groove. These are very distinct advantages to the retail dealers who keep on hand different brands of oak flooring.



Building and Loan Proposition

(Continued from page 46.)

It would cost very little to try it out. There is no limit to the possibility of such co-operation. There is no limit to the possible increase in the use of lumber.

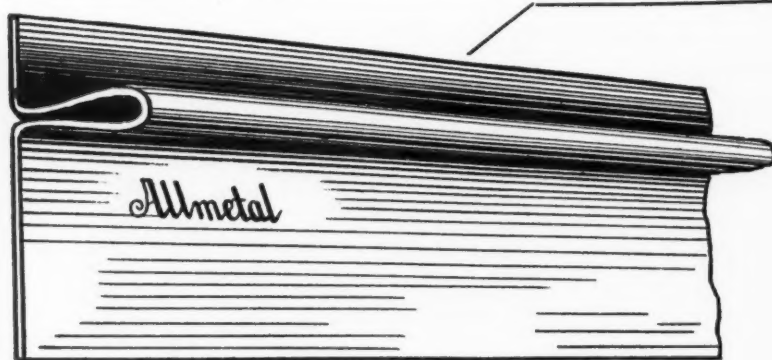
In promoting the building of homes by mechanics, clerks, laboring people, and others in the smaller communities, we would be opening a field for the con-

sumption of our product. In every community where there is a single or several lines of business engaged in manufacturing, employing laborers and mechanics to the extent of 1000 men, the owners and operators of such plants could afford to establish in their own offices, or if not practical there, to maintain at their own expense all of the clerical help necessary to conduct a Building and Loan Association without \$1.00 charge to the members whatsoever. They could build homes and sell them to their employees on the Building and Loan plan.

It is of very little importance what the rate of interest Building and Loan Association members pay. It may be very large, but if all pay the same there is no burden. The larger the interest, the quicker the maturity of the stock and the sooner does the homeowner come into entire possession of his property.

The principle upon which the average Building and Loan Association is conducted, that of weekly and monthly dues, loans compounded monthly, at a minimum expense of doing business, is the best and quickest and safest method of obtaining homes for those not in possession of sufficient funds. It is for the retail lumberman and the manufacturer here assembled to work out a plan whereby the Building and Loan Association plans, purposes and benefits may be extended to every community possible, thereby develop-

(Continued to page 140.)



How about F A L L business?

Do you expect a slump during the coming Fall and Winter season? Are you interested in a proposition that would keep you busy every working day of the season? In other words do you want to spend a little more energy now and line up business that will carry you through the dull season?

If so, you will want to find out about

ALLMETAL WEATHERSTRIP

It's a live specialty! Why not work up a fine substantial business with Allmetal Weatherstrip by the assistance of our carefully devised, sure-fire, sales plan. Allmetal Weatherstrip, owing to its simplicity of design, is the easiest to install—it is the best known and therefore easiest to sell.

Allmetal has Uncle Sam's Approval

It is the one strip that will not crack, rust, decay or disfigure the woodwork. He has selected it for his defense against leaky, balky windows and high cost of fuel. It is the perfect, the modern, the only strip to use.

We show You how to get quick results

Our short cut methods get live prospects quickly. We give you the benefit of our experience. Supply you with advertising material adapted for your particular purpose. Write—get started NOW!

Allmetal Weatherstrip Company, 230 West Madison St., Chicago

Diamond Metal Weather Strips and Diamond Calking and Glazing Compound

Have built up a permanent, profitable business for a large number of **contractors** and **carpenters** who took the agency as a side line and developed enough business to devote their entire time to it, some making from \$3,000 to \$5,000 per year clear profit. **Why? Because** the goods are **the best on the market**—which makes satisfied customers. If you're not a Diamond agent you're missing something. Write for agency proposition—now—today.

Address C. J. PARSONS, Manager
The Diamond Metal Weather Strip Co. Columbus, Ohio



Wilder Steel-Latch Cattle Stanchions

have special, patented features every contractor and stock owner should know about. All hardwood construction except for our Steel Latch. They're smooth—rustless—easy to adjust. Automatically rigid when open—swing freely when closed. *Cheaper and more efficient than steel. Write for full information.*

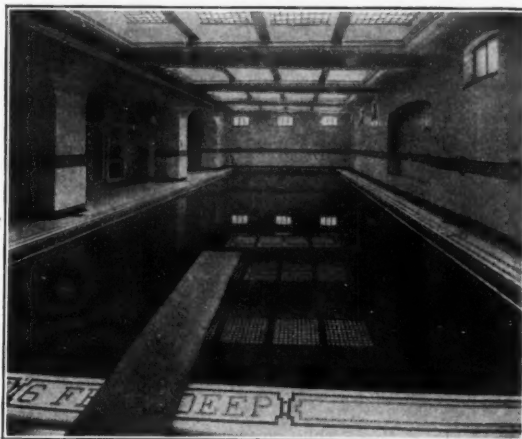
WILDER-STRONG IMPL'T CO.
 Box H, Monroe, Mich.

Carpenters Wanted

THE HENRY AIRTIGHT WEATHERSTRIP for the bottom of DOORS and CASEMENT WINDOWS. A perfect protection against rain, cold, snow, and dust. Approved by architects, contractors, and builders wherever known. Carpenters and others are making big money selling them.

Write today for our proposition.

The
 Henry Airtight
 Weatherstrip Co.
 Crawfordsville,
 Indiana



THE illustration shows the swimming pool in the Walker Gymnasium, Stevens Institute of Technology, Hoboken, N. J., above which are installed

BERGER'S
Raydiant

Sidewalk Lights. This is a rather unique picture, the reflection in the water showing the arrangement of light to good advantage.

The Raydiant System transmits the maximum amount of daylight; is exceptionally strong, being doubly reinforced by permanent interlocking steel forms and reinforcing rods; watertight; durable; easily and quickly installed.

Send for Catalog T. A. B.

The Berger Mfg. Co., Canton, Ohio
 Branches: Boston, New York, Philadelphia, Chicago, St. Louis, Minneapolis, San Francisco, Los Angeles
 Export Dept.: Berger Bldg., New York City, U. S. A.

—Attention CARPENTERS AND BUILDERS!

SHOGREN Metal Weatherstrips

will make an extra profit for you in your business, if you write us immediately regarding information on installing Shogren Metal Weatherstrips in your locality.

The Shogren Metal Weatherstrips are by far the most superior on the market today and are also the easiest to install. You can install Shogren Metal Weatherstrips in half the time of any other make. They embody every advanced idea plus an exclusive method of operation which has no equal and the prices are no higher than what every customer on your list can well afford.

Write us now for information

Without obligation, we will gladly send you complete data on the Shogren Metal Weatherstrips and how you can cash in on our proposition now. Write today.

SHOGREN WEATHERSTRIP CO.
 14 East Jackson Blvd. CHICAGO, ILL.

Building and Loan Proposition

(Continued from page 138.)

ing not only the community, but bringing greater returns to that particular industry in which we are interested—the lumber business.

The National Lumber Manufacturers' Association employs men who are experts in mill construction, wood preservation and general trade extension. Why not employ at least an expert Building and Loan Association man and I pledge you the co-operation and support of the retail associations and their members in an honest trial to make the effort a success.

Why not adopt now and here the slogan:

"A HOME FOR EVERY FAMILY!"



Painting the Exterior

(Continued from page 92.)

of good taste in order that its less fortunate neighbors may be enabled to enter into harmony with its color scheme because of the good example which it has set.

The modern house with its use of stucco, shingles, wide and narrow sidings, belt courses, lends itself readily to a restful and happy color combination. The older type of house, however, with its excess of scroll saw and turned work, should so balance its colors to leave these features as unobtrusive portions rather than accent their presence as has so often been done.

A house in the city, located on a dusty street closely crowded by its neighbors, can be painted in much lighter shades of grays, tans or browns than is commonly supposed with often increased wearing qualities in the paint and added cheerfulness in the lives of the tenants thru the increased amount of light brought into the rooms.

I am suggesting for color schemes suitable to many locations and types of houses such combinations as the following named in order of body, trim and window point.

Medium ivory or light cream; silver gray; light greenstone.

Cream; light brown; black or moss green.

Pure gray; light cream or ivory; black or greenstone.

Dark brown; cream; silver gray.

Silver gray; ivory; white.

Silver gray; white; black.

Light buff; warm gray; moss green.

In mixing these paints follow the formulas given in the August issue of the AMERICAN BUILDER. It will be necessary that all loose, scaly, or blistered paint be removed by burning or scraping and afterwards sandpapered, followed by the priming coat as mentioned in the August issue. See that all knots and sap streaks are cleaned and shellacked with good orange shellac. If the house has been exposed to

(Continued to page 142.)



**Our Catalog is
An
Efficient Aid
in Purchasing**

Perfect Light and Ventilation

Write for Catalog

You do not need to search any further for the efficient, economical skylight and ventilator. We have it. After 25 years of careful investigation and experimentation by us we have at last succeeded in putting on the market the one perfect ventilator and skylight.

This space is entirely too small to tell you of the many good qualities we have put in the Willis Products and Ventilators.

They are simple in construction and attractive in appearance. They have no parts to get out of order. They are extremely easy to install. No soldering necessary. They come ready to put up.

Net Prices Furnished Promptly Upon Request.

Write for a copy of our general Catalog No. 7. This book covers every requirement you may have for Sheet Metal Building Materials.



Dept. "E"
WILLIS
MANUFACTURING CO.
Galesburg, Ill.



SECURE and INSURE Proper Ventilation

Of residence, public buildings or barns. Royal Ventilators are designed to improve the good appearance of any building.

They operate—day or night—rain or



shine. They give a maximum exhaust at a minimum cost.

More lasting good qualities are to be had in the Royal Ventilators than any other.

Write for catalog today.

ROYAL VENTILATOR CO.
417 Locust St. Philadelphia, Pa.

CWC WATERPROOFING PRODUCTS

Ceresit Waterproofing Compound
Cem-bric Covering Compound
Indurite Concrete Hardener
Radiolite White Enamel

Get the Ceresit Waterproofer and learn about these waterproofing products.

CERESIT WATERPROOFING CO.
910 WESTMINSTER BLDG., CHICAGO

CERESIT
TRADE MARK
REGISTERED

Badger Equipped Hog Houses Insure Healthy Hogs

Direct Sunlight and Ventilation is now demanded by all up-to-date Hog Raisers. The best way to supply this demand is by furnishing the Badger Quality Line. Badger Hog House Skylights, Cupolas, etc., are scientifically constructed of guaranteed rust-proof material. First cost is the only cost, as they last a lifetime.



Write at once for full particulars and special price proposition

Badger Steel Roofing & Corrugating Co.
La Crosse, Wis



Owners of factories, mills and shops know that proper ventilation is a profitable investment. Carpenters find it profitable to recommend the installation of

"GLOBE" VENTILATORS

because they operate so efficiently at all times. GLOBE VENTILATORS are particularly strong and durable—will last a lifetime—absolutely noiseless—no moving parts—cost but little to install, nothing to maintain. Our advertising in "Factory" and "System" is helping carpenters sell more GLOBE VENTILATORS.

For information address Department F.

Globe Ventilator Co.
TROY, N. Y.

CHIEF ALL-STEEL CUPOLA

New-improved, scientifically designed ventilating cupola for all buildings. Up-to-date in design, material and construction. Used and approved on hundreds of farms. Made of heavily galvanized steel with base strongly braced. Can't rust, rot, or blow off. Absolutely storm-proof and bird's-nest proof.

Easy to Install—Sure to Please Your Customers

Chief Cupola saves time and labor installing—base bolts directly to roof and cupola bolts to the base. Only six bolts needed. Meets all requirements—insures adequate ventilation—satisfies all users. Write for full description, prices, etc.

Shrauger & Johnson Co.
430 Walnut Street, Atlantic, Iowa



GET ALL THE PROFIT

Shipped
Ready to
Install

Easy to
Erect



Your reputation and future orders depend upon the equipment you recommend. Don't take a chance. Get the present and future profit by recommending and equipping the barns you build with

O-K Cupolas

Every one you erect adds to your reputation. They solve the barn ventilation problem and sell themselves. O-K Cupolas are neat in appearance. Bird, storm, rust and rot proof. Made of heavy galvanized steel. Cost no more than the ordinary kind.

Special Prices to Contractors and Builders where we are not represented

Write for full particulars of this and other money-making specialties

Phillip Bernard Co.
2400 Floyd Ave. Sioux City, Iowa

Painting the Exterior

(Continued from page 140.)

excessive fumes from smoke stacks or manufacturing plants it is often an economy to have the entire exterior wall surface of the house scrubbed with brush and Gold Dust, afterwards rinsing down thoroly with the hose. When dry, follow with sandpapering and the first coat of paint. Allow three to five days between coats, ascertaining that the work is done when the surface is warm and free from moisture from dew or rain.

For new work on a new house, if possible have a fire in the furnace for a week before doing the second and third coats of outside painting. This is necessary in order that the plaster may be thoroly dried and to prevent the moisture, driven out of the plaster by the furnace heat, from blistering and peeling the second coat and finish coat. Do not paint until the plaster is thoroly dry.

Too much thinning of the under coats, whether with linseed oil, turpentine or any other thinner and too free use of japan drier will injure the durability. Carelessness in brushing out paint is responsible for lots of trouble. Paint must be rubbed and brushed into and onto the surface, *not* flowed on like varnish. Three well brushed, thin coats will outwear two thick coats. Two coats are not enough on new work to give good results. Use a priming and two coats of finish. The under coats should not dry too fast nor too

glossy, if so, the last coat will not adhere. A porous surface needs more oil than an old or hard surface. The last coat should be full bodied and almost no turpentine used at all.

All paint stocks should be mixed at least twenty-four hours ahead to allow thoro absorption of the oil.

After the first coat and before the second, all putty work should be done and three days allowed for hardening before the second or third coats are applied.

Employ a good painter who hires sober men; has good equipment and who is willing to do the right thing at the right time. When the job is done, be satisfied to pay a good and reasonable price for work well done. The job will speak for itself.



The Man from the Lumber Yard

(Continued from page 55.)

the people's purse will be squandered on folly and foolishness or builded for better health and morals.

If you don't care to give the above any thought from the humanitarian standpoint, think of it for its financial possibilities.

Not Sudden

The great trouble is that one theory is tried out for a day and another is taken up for the next day.

There is too much scattering in efforts and where

(Continued to page 144.)



Get the Deming Handbook of Water Supply Facts.

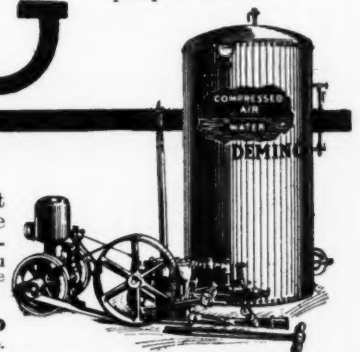
DEMING

Deming System No. 2010 for home of ten people or less.

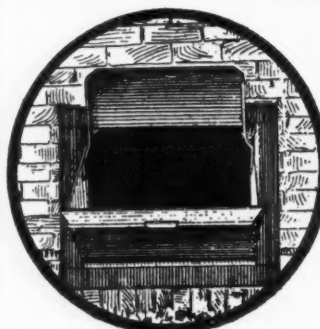
Teamwork Wins —

Get together with your local plumber and score one against the h. c. of l. Sell your next house customer on the home sanitation and convenience of a Deming Water Supply System—your plumber does the work when the house goes up—you both pocket an extra profit. Investigate. Write today for the Deming proposition and water supply facts.

The Deming Co., 99 Depot St., Salem, Ohio
Chicago: Henion & Hubbell
Pittsburgh: Harris Pump & Supply Co.



KEWANEЕ ALL-STEEL COAL CHUTES

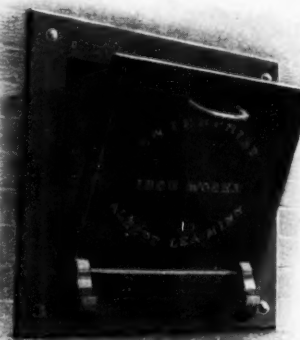


Five good reasons for installing the Kewanee. It locks automatically on the inside. Can be opened from the first floor by means of a chain in the lock. All steel construction, and cannot be broken. Guaranteed for five years. Easy to install in an old building as well as a new.

Write today for Contractors' and Dealers' Prices

KEWANEЕ MFG. CO.
KEWANEЕ, ILL.

The Enterprise Coal and Fuel Chute



A POPULAR Coal-chute for every building and at a popular price.

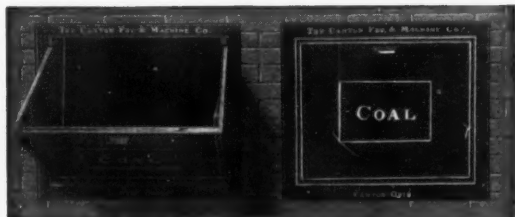
Conceded by all odds to be the easiest installed, easiest operated, and simplest Fuel-chute made—four pieces only—and a Complete chute: Frame, Chute, Lock, and Weight, which locks automatically by gravity.

Good money for the Contractor or Builder in any community.

Circulars and prices for the asking. Write today to

Enterprise Iron Works
Albert Lea, Minnesota

Start Right



Install the Canton Coal Chute in the homes of hundreds of your neighbors. They need new coal chutes to take the place of their old dirty and wornout chutes.

The sale of one Canton means many more sales.

They are a practical and sensible chute of durable, all-metal construction.

They are burglar-proof, locking automatically on closing and equipped with an independent outside lock.

The large hopper is protection for the lawn.

Write for Catalog B-4 Today

Canton Foundry & Machine Co.
CANTON, OHIO

Furnace Contracts



You can pile up a nice profit without interfering with your regular business by taking up our Agency Proposition for installing

Hero Pipeless Furnaces

They are easily and quickly installed; they are the simplest, most practical furnaces for heating homes, stores, or halls; they represent an economy in installation as well as "First Cost;" and they are sure to give complete satisfaction to users.

Chas. Smith Company
57 W. Lake Street Chicago, Ill.

Clean Air Heater

One Register System

Big Money for You

One installed sells many more. Buy direct from Manufacturer — Save Money — Secure Satisfaction.

- Efficient
- Economical
- Practical

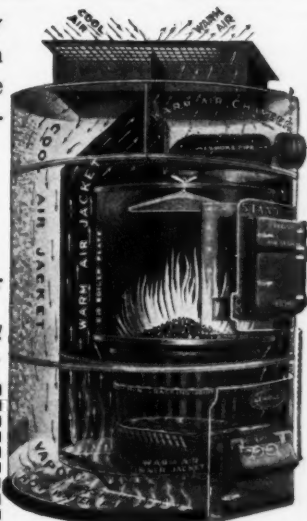
Guaranteed by Two Year Trial Bond.

Write Today for our Special Proposition to Contractors.

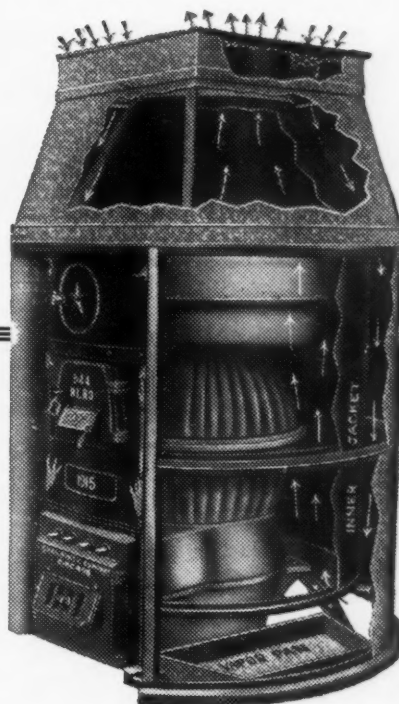
MAIL TODAY

Standard Heater Co.
438 W. Ontario St., Chicago
Send me your Special Agency Proposition to Contractors.

Name.....
Address.....



STANDARD HEATER CO.
438 West Ontario Street
CHICAGO



The Man from the Lumber Yard

(Continued from page 142.)

one plan is operated on, it is continued for too short a period.

Concentration of purpose will win where scatteration will lose, especially if concentration be hooked up with continuation.

I have learned a lesson from an industrious time-piece at home.

It has to tick off eighty-six thousand four hundred (86,400) separate and distinct ticks in one day and keep it up seven days in the week.

It can give only one tick at a time, but it concentrates on its job and continues on the job and delivers.

Learning Concentration

It was Wednesday, Sept. 17, about 7:30 a.m., that part of the Honor Draft Army began assembling in the narrow street adjacent to the Illinois Central train shed. It was a new experience for American mothers of this generation to send their boys to war.

An observer could see the strain under which they were to keep a brave smile until the boys had marched by to the train. A young man who had worked with me for the last seven years, was of the number.

When I had bidden him Godspeed, I was attacked by a leaking of the eye and pretended to have hay fever, as I used my handkerchief.

They were not tears of sorrow, nor yet of joy. It was that same tightening at the throat felt when

you hear great music or see a great tragedy or your favorite ball player makes a fine strike, bringing himself and two others home when the score is even.

I knew that all over Uncle Sam's domain young men just like my man were entraining to learn the war game. You have read of the earnest work done. Ninety per cent is to learn how to concentrate on the job in hand.

If my own boy or this young man to whom I feel like a father returns short an arm, an eye and an ear, he will be more of a MAN than he would have been without the training, even if he were whole in body.

Good fellows who had been drifters who couldn't concentrate on any special work will secure the training that will make real men of them.

Can't Begin Yesterday

They don't take bald headed chaps who are granddads into the army. I must get my training in CONCENTRATION some other way. When I woke up to my need I didn't bewail the fact that I couldn't begin yesterday to get strong in will power, nor did I wait until tomorrow; but I began at once on the today.

Organize

There has been a concerted movement for creating public opinion on and desire for other things than homes. If those interested in home building do not have enough interest to organize and enough of purpose to push a campaign, the dealer in building mate-

(Continued to page 146.)



Earn \$27⁵⁰ A Day Easily

Carpenters and builders can earn this money by working all or spare time. Start now to own a business of your own. Akron Lighting Systems are wanted in homes, stores, churches and public buildings. Best and cheapest light known. Uses common gasoline. Absolutely safe. Permitted by Insurance Companies.

Sell Akron Lighting Systems

They are simple, dependable and durable. Have latest patented improvements. Give an abundance of bright, clear, soft, steady light which is restful to the eyes. Complete line of portable lamps and lanterns. Lamps are clean—no smoke, no wicks to trim and odorless. They will burn in any position whether standing erect or upside down. Lantern is storm-proof, bug-proof and wind-proof. Gives a 400 c. p. light. Is absolutely safe; can be dropped or rolled without danger of exploding. Fully guaranteed. Exclusive territory to Agents. Outfit Free. Write NOW for catalog and agent's proposition all Free.

AKRON GAS LAMP CO., 311 Gas Building Akron, Ohio



Sold direct at Wholesale Price in open territory.

BUILD Your Own Phonograph

It's easy with our help AND SAVE OVER HALF

A few hours interesting work saves many dollars and gives you a machine exactly to suit your ideals. We furnish motors, tone arms, case material, blue prints and full instructions. Plays any record. You can make fine profit building phonographs for your friends.

Write today for our free blue print offer

Choraleon Company
1001 Monger Bldg., Elkhart, Ind.







SYKES EXPANDED CUP



Applied direct to sheathing boards over waterproof paper, Sykes Metal Lath insures a wall of uniform thickness easy to plaster over. Can't be applied wrong.

Write for booklet and sample of

SYKES Expanded Cup Metal Lath

**Self-Furring
Saves Labor
Saves Materials
Insures Strength**

Sykes Metal Lath makes a rigid wall, using less mortar than other methods, but giving a perfect key. Indorsed by architects and contractors.

SYKES METAL LATH & ROOFING CO.
504 Walnut St., Niles, Ohio

MYERS POWER PUMPS

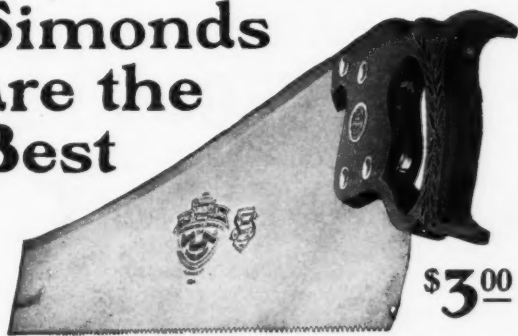


What kind of Pumping Service are you interested in? If you require a Power Pump or Working Heads for inside or outside use, remember MYERS build high grade Power Water Lifters in many styles and sizes for pumping water from shallow or deep wells and cisterns, lakes, ponds and streams, and forcing it into open or pressure tanks, elevating it or pumping it long distances. Operation by gasoline engine, motor or any other power—and the name MYERS guarantees the service. Catalog mailed on request.

F.E. MYERS & BRO. ASHLAND, OHIO.

ASHLAND PUMP AND RAY TOOL WORKS
ALBANY - BARTISBURG - MILWAUKEE - CEDAR RAPIDS - ST. LOUIS

Simonds are the Best



\$3.00

The saw that does not need setting
—Simonds No. 51 Blue Ribbon—
\$3.00 Saw.

Carved and polished Applewood handle.
Large hand hole. Four brass screws.
Simonds Special Crucible Steel Blade.
Straight back. 26-inch. 10-point.

Sold at your dealers or sent direct on
receipt of price.

SIMONDS MFG CO. Fitchburg,
Mass.
17th St. and Western Ave., Chicago, Ill.

There
is the Reason
Why



"You Get The Job"

"We've been watching you, young man. We know you're made of the stuff that wins. The man that cares enough about his future to study an I. C. S. course in his spare time is the kind we want in this firm's responsible positions. You're getting your promotion on what you know, and I wish we had more like you."

The boss can't take chances. When he has a responsible job to fill he picks a man *trained to hold it*. He's watching *you* now, hoping you'll be ready when the opportunity comes.

The thing for you to do is to start today and train yourself to do some one thing better than others. You can do it in spare time through the International Correspondence Schools. Over 5000 men reported advancement last year as a result of their I. C. S. training.

The first step these men took was to mark and mail this coupon. Make your start the same way—and make it right now.

I. C. S., Box 8148 Scranton, Pa.

TEAR OUT HERE

INTERNATIONAL CORRESPONDENCE SCHOOLS

Box 8148 SCRANTON, PA.

Explain, without obligating me, how I can qualify for the position, or in the subject, before which I mark X.

- | | |
|---|---|
| <input type="checkbox"/> ARCHITECT | <input type="checkbox"/> Law for Contractors |
| <input type="checkbox"/> Architectural Draftsman | <input type="checkbox"/> BUSINESS (Complete) |
| <input type="checkbox"/> Contractor and Builder | <input type="checkbox"/> BOOKKEEPER |
| <input type="checkbox"/> Building Foreman | <input type="checkbox"/> Stenographer and Typist |
| <input type="checkbox"/> Concrete Builder | <input type="checkbox"/> Higher Accounting |
| <input type="checkbox"/> Plumber and Steam Fitter | <input type="checkbox"/> GOOD ENGLISH |
| <input type="checkbox"/> Heating and Ventilation | <input type="checkbox"/> Common School Subjects |
| <input type="checkbox"/> Plumbing Inspector | <input type="checkbox"/> Mathematics |
| <input type="checkbox"/> Foreman Plumber | <input type="checkbox"/> SALESMANSHIP |
| <input type="checkbox"/> CIVIL ENGINEER | <input type="checkbox"/> ADVERTISING MAN |
| <input type="checkbox"/> Surveying and Mapping | <input type="checkbox"/> Window Trimmer |
| <input type="checkbox"/> Structural Engineer | <input type="checkbox"/> Show Card Writer |
| <input type="checkbox"/> Structural Draftsman | <input type="checkbox"/> CIVIL SERVICE |
| <input type="checkbox"/> ELECTRICAL ENGINEER | <input type="checkbox"/> Railway Mail Clerk |
| <input type="checkbox"/> Electric Lighting | <input type="checkbox"/> AGRICULTURE |
| <input type="checkbox"/> Electric Wiring | <input type="checkbox"/> Poultry Raising |
| <input type="checkbox"/> Electric Car Running | <input type="checkbox"/> MINE FOREMAN OR ENGINEER |
| <input type="checkbox"/> MECHANICAL ENGINEER | <input type="checkbox"/> Metallurgist or Prospector |
| <input type="checkbox"/> Mechanical Draftsman | <input type="checkbox"/> Chemical Engineer |
| <input type="checkbox"/> Shop Practice | <input type="checkbox"/> Gas Engineer |
| <input type="checkbox"/> Sheet Metal Worker | <input type="checkbox"/> AUTOMOBILES |
| <input type="checkbox"/> STATIONARY ENGINEER | <input type="checkbox"/> Auto Repairing |
| | <input type="checkbox"/> Spanish |
| | <input type="checkbox"/> German |
| | <input type="checkbox"/> French |
| | <input type="checkbox"/> Italian |

Name _____

Occupation _____

& Employer _____

Street _____

and No. _____

City _____ State _____

If name of Course you want is not in this list, write it below.

The Man from the Lumber Yard

(Continued from page 144.)

rial and the builders will have lean times until the pendulum swings back of its own accord. But why should the building interests simply drift.

The Worthwhileness

There will be held before this goes to print, the sixth session of the National Conference on Housing.

Men of public spirit and vision are working on this problem of home building. Any dealer or builder that is interested enough to write to our editor will receive concentrated information on this subject that will be of interest in a broad way and of vital importance to every community. Every one that reads this is directly or indirectly interested in knowing how to provide decent and healthful dwellings for the family that has only a \$15.00-per-week wage, as well as the proper ventilation and convenience for the family that enjoys a larger income.

The solution of this problem means the lengthening of the span of the infant's life to carry it into the period where it is strong enough to fight its own battle

for existence. It means the giving of a proper spirit to the worker so he can fight off poverty.

You have possibly thought that the reason people lived in poor houses was because they were poor.

I say to you that living in a squalid home with bad air, bad toilet and bath facilities begets poor specimens of humanity that naturally gravitate to wretchedness.

Not Because of But in Spite of

You draw attention to the fact that President Lincoln came from a log cabin and some of the boys born in the "Gold Coast" in Chicago went to the scrap heap.

Lincoln had ideals in his home and an ancestry on his mother's side that were dynamic. You will find where a lad takes the toboggan that a parent has failed in duty regardless of the money owned.

Trace this failure of duty to its source and you will find it had its origin in unwholesome living conditions.

Graham Taylor says: "While shiftless people wreck

(Continued to page 148.)



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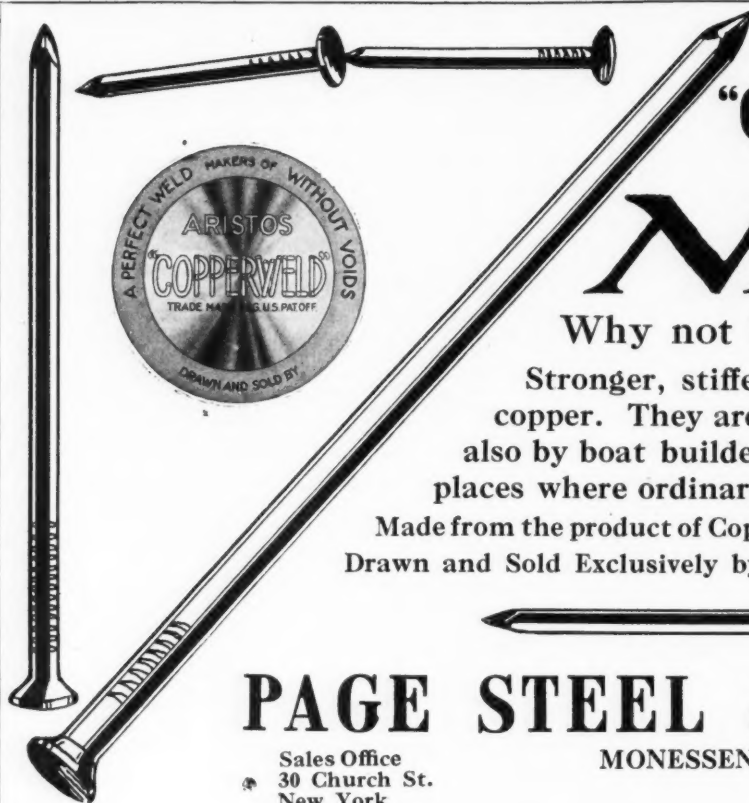
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S. C. JOHNSON & SON
Racine, Wisconsin, U.S.A.

The Man from the Lumber Yard

(Continued from page 146.)

the house, the house starts or finishes the wrecking of meek and shiftless people."

Your Brother's Keeper

Every day I am more and more impressed with the smallness of the world. Don't think that because you don't patronize the saloon, John Barleycorn will have no grip on you.

Don't think that the tenement problem in New York doesn't mean anything to the Iowa dealer in supplies or the Wisconsin builder.

Don't think that the Chicago contractor is not interested in the best being had in homes for the people who grow fruit in Michigan or wheat in Minnesota. The house has to do with the determining of the happiness or misery, the health or sickness of all, especially the child. If you are not your brother's keeper, you are vitally interested in the kind of children your neighbor has, and he in your children, if both are interested in the grandchildren.

Believe me, I can testify to the value of a grandchild. My grandchild couldn't be what it is if some one had not been interested in the proper raising of its mother.

An Utopian Dream

Some day Uncle Sam will take a paternal interest in his children, poor and rich, the same as he now takes interest in his hogs and cattle. In that day he will say that all ugliness must also disappear. Ugliness is badness and it begets badness.

The only reason we tolerate unsightly houses, the uncomely rows of houses, each the counterpart of the other, and the ramshackle tenements, is because we are bad.

If we all followed the teachings of the Great Teacher we would have beauty and loveliness in every structure, farm house or granary, city office building or apartment. The country roads and city streets would be adorned. Vacant lots would produce other than weeds, and untilled fields would blossom with beauty while resting. This would beget so much good that we would not have to wait until some indefinite period in the future to enjoy heaven because we would have heaven here on earth.

You and You

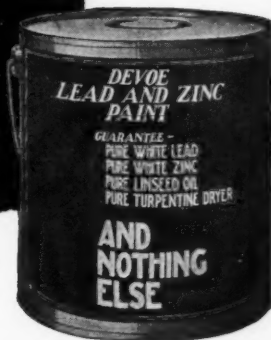
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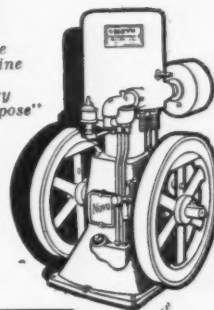
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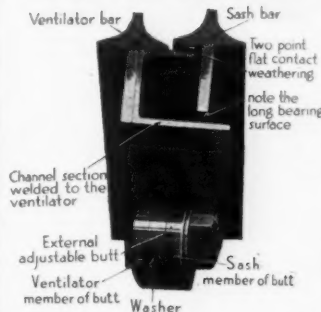
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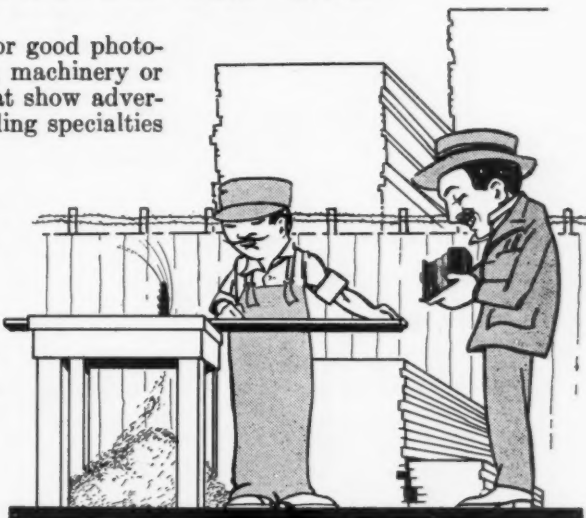
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We want human interest pictures—close-up photos that show the details of the tool, device, machine, or material. We want it posed true to life, just as actually used.

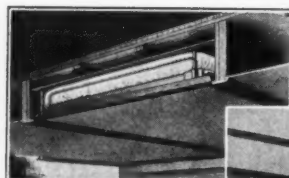
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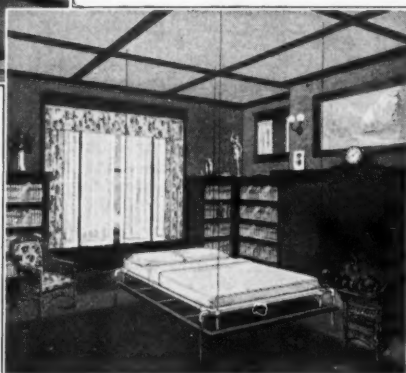


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What is meant by Floor Plans, Elevations, Sections, Interior and Exterior Details.

How Different Materials are Shown in Sections.

Illustrating wood, stone, concrete, brick, glass, slate, cast-iron, etc.

Reading and Checking Sizes and Dimensions.

Showing how to use $\frac{1}{4}$ -inch, $\frac{1}{8}$ -inch, $\frac{3}{16}$ -inch scale on a plan.

Illustrating How Different Fixtures are Shown on a Plan.

Plan of kitchen, showing chimney, hearth with range, boiler, washtubs, drainboards, sink, pump, dumbwaiter, pantry with shelves. Plan of bathroom, showing bathtub, washbasin, water closet, medicine cabinet and soil pipe. Plan of bedroom, showing bed, radiator or register. Showing how single-swing and double-swing doors are indicated.

Illustrating Difference Between Frame and Masonry Wall.

Plan of a cellar, showing how footings, columns, joists and girders are indicated on a plan.

Giving Complete List of Symbols.

or abbreviations commonly used on plans. For example: O. C., meaning on centre; D. S., meaning double strength; W. I., meaning wrought iron. Illustrations showing how stairs, bookcases, colonnades, cased openings, fireplaces and hearth, buffets, seats, ice boxes, doors, windows, beamed ceilings, single and double sliding doors, floor drains, etc., are indicated on plans.

Chapter on Reading Barn and Outbuilding Plans.

Illustrations showing how horse stalls, cow stalls, box stalls, mangers, gutters, carrier tracks, foul-air shaft, fresh-air inlets, floor drains, Dutch doors, sliding doors, feed troughs and guard rail for hog houses, roosts, nests and dropping boards for poultry house are shown on plans.

Taking off a Bill of Materials.

Concrete Work.

Method of figuring number of cubic yards of concrete in footings, foundations, piers, floors, etc. Method of figuring amount of cement, sand, and aggregate in each cubic yard.

Stone Work.

Figured by cubic yards. Amount of mortar required for each cubic yard. Amount of cement and sand in cubic yard of mortar.

Brick Work.

Methods of figuring number of brick in walls, chimneys, fireplaces, cisterns, etc. Amount of sand, cement or lime necessary to lay 1,000 bricks with different thicknesses of joints.

Framing.

Residences.

Rough Lumber.

Methods of figuring number of pieces, sizes and lengths of wall plates, girders, posts, joists, rafters, studs and collar beams. Illustrations showing exact location of each, also safe spacing and sizes of joists for various common spans. How to figure number of feet of roof and box sheathing.

Roof Covering.

Methods of figuring number of shingles required, whether wood, slate, asbestos, asphalt, cement. Also number of sheets of tin roofing. Also number of square feet of tar and gravel roofing. Also figuring tile roofing, prepared roofing, galvanized iron roofing, metal shingles, etc.

Exterior Finish and Millwork.

Method of figuring number of lineal feet of fascia, frieze and porch box, water table, planter, ceiling, lattice frame, lattice. Also figuring door frames, window frames, crown mould, bed mould, drip cap, cove mould, top and bottom rail, baluster stock, columns, newels, etc.

Interior Trim.

How to figure number and size of door frames, door jams, window frames. Also number and size of all doors and windows, number of feet of wainscot, base, picture mould, mouldings, chair rail, plate rail, ceiling beam. Also how to figure flooring, stairwork, mantels, fireplaces, window seats, sideboards, book cases, colonnades, medicine closets, wardrobes, shelving, etc.

Plastering.

How to figure number of feet of grounds, furring, number of wood lath or square yards of metal lath. Amount of plaster necessary, whether cement or lime, figuring amount of wall board or plaster board.

Painting.

How to arrive at the amount of material necessary for priming and finishing both exterior and interior. Also wood filling, hardwood finishing, varnishing, waxing, staining, bronzing, shellacing, enameling, calcimining, etc.

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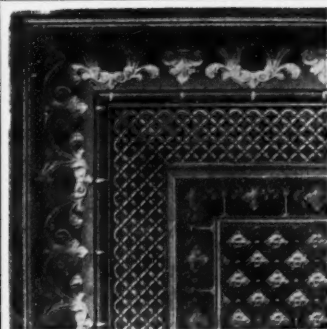
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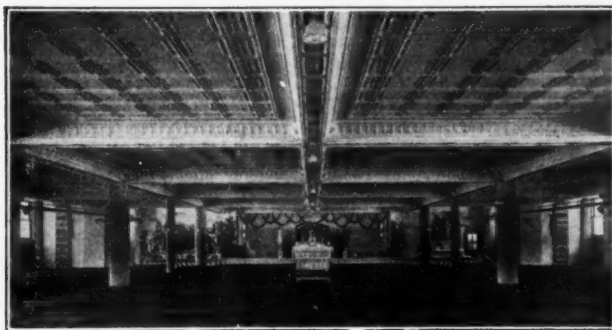
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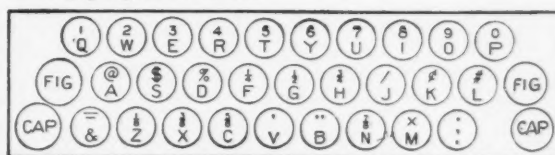


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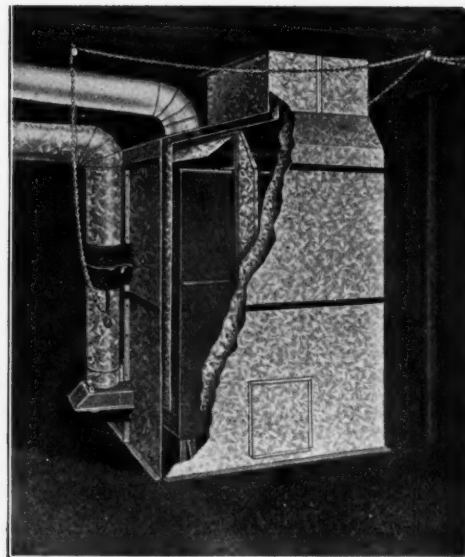
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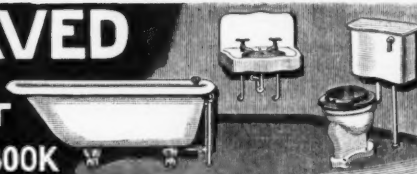


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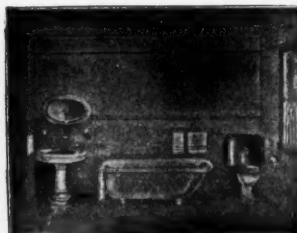
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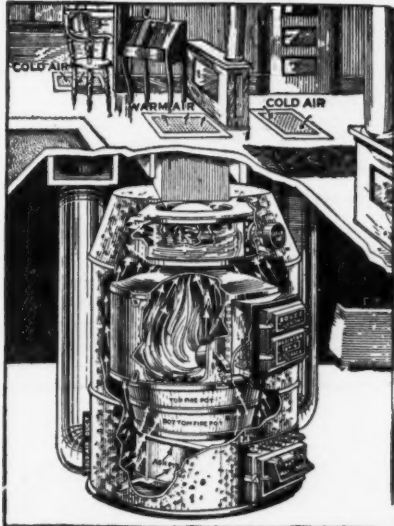
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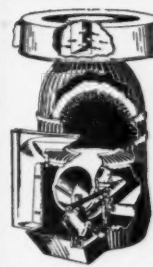
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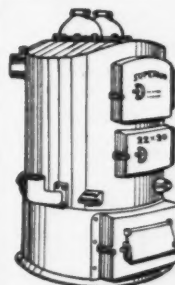
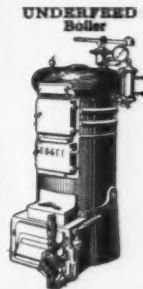
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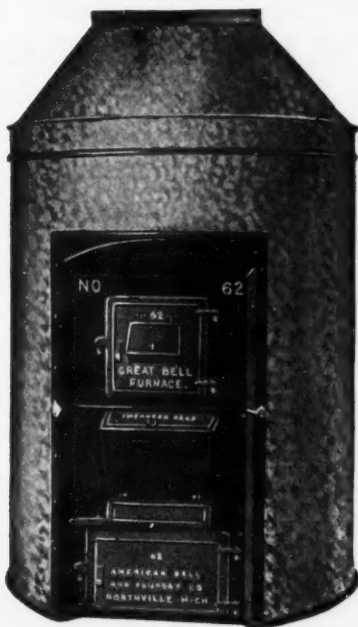
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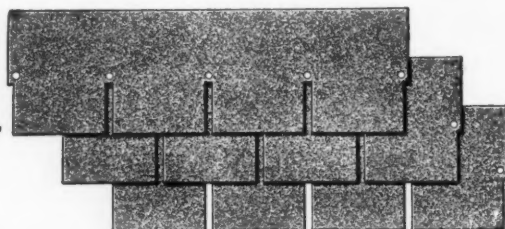
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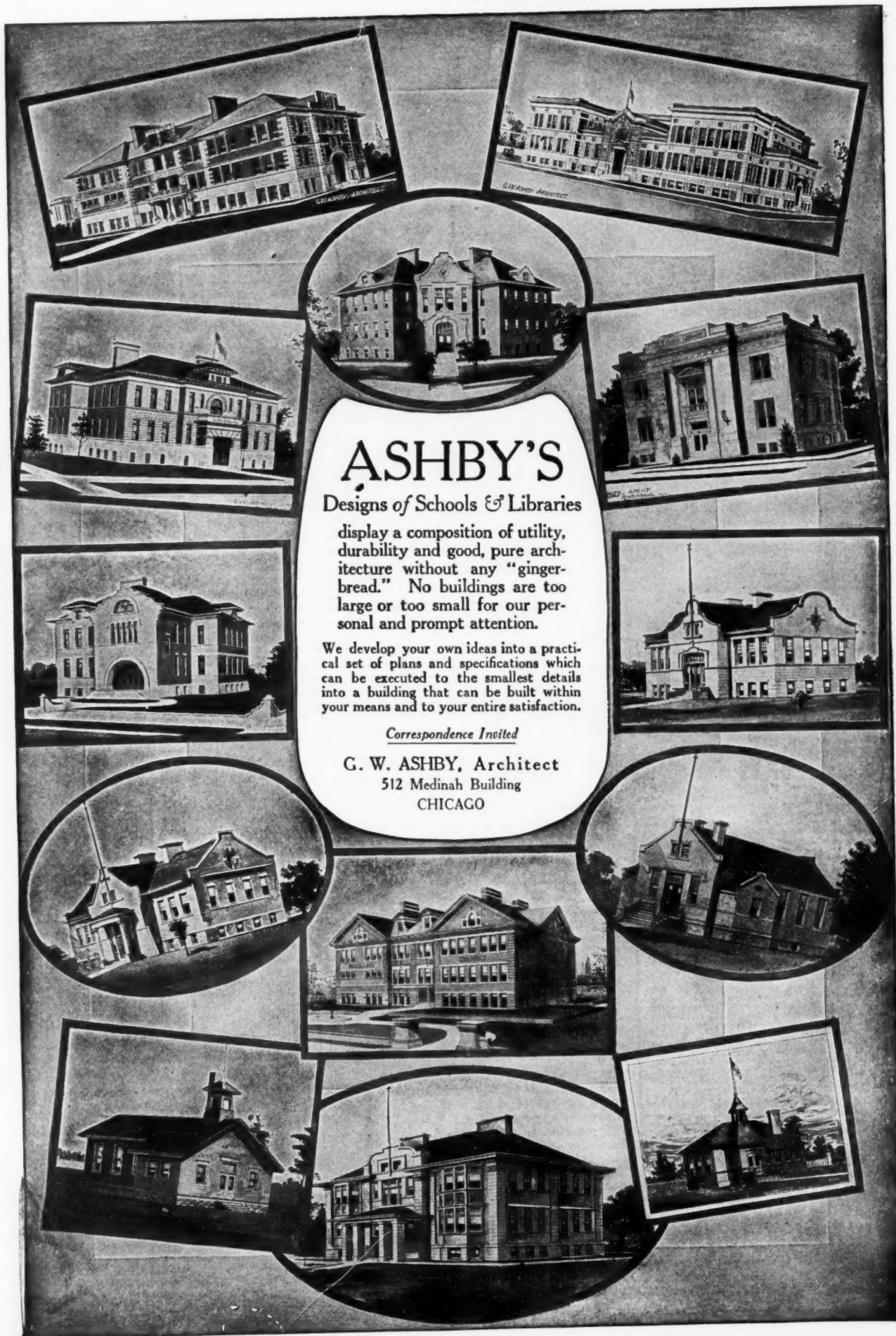
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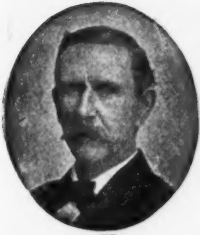
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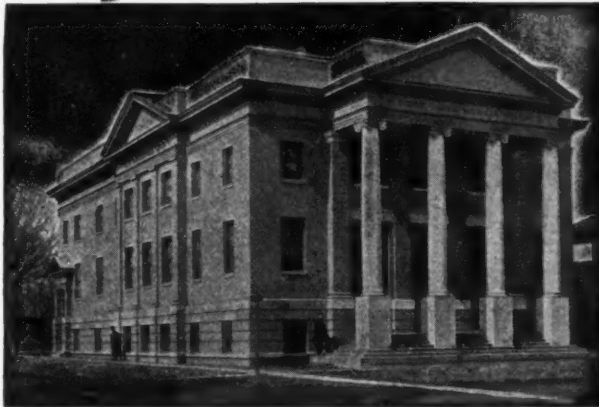
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Denomination.....

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Inside Bead, Patented June 18, 1912

"SUPERIOR" Metal Corner Bead

Damaged plastered corners, unsightly cracking where wall meets wall or ceiling—imperfect corner lines—"Skinning" of mortar coat from jambs to inner corners, and many other troublesome plaster features disappear when you use "Superior" Metal Corner Bead.

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Lath
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Section of Berger's Metal Lath

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No.

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- 1.—Protection from falling plaster. 2.—Protection from fire. 3.—Protection of walls from rats and mice. 4.—Protection from frequent repairs. 5.—Protection of decorations through prevention of cracks in the walls.

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The small diamond mesh of Berger's Metal Lath save plaster and provide a grip clinch which holds the plaster securely for the life of a building.

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As an up-to-date builder, you should be fully acquainted with the methods and materials used in fire-proof construction. Therefore, you will find this bulletin on Berger's

Metal Lumber

—a pressed steel construction which replaces wood, piece for piece—interesting and valuable for reference. This bulletin contains complete technical information on Metal Lumber, including tables of safe loads; sizes, weights and lengths of material; points of interest in design; use and adaptability; reasons for past and present extensive use, and specifications.

Ask for Bulletin 12 A. B.



The Berger Mfg. Co., Canton, Ohio
Branches: Boston, New York, Philadelphia, Chicago, St. Louis, Minneapolis, San Francisco
Export Dept.: Berger Bldg., New York City, U. S. A.

Are you awake to the profitable source of business in the overcoating of old dwellings?



Here is an old residence made into an attractive home by renewing the exterior.

Many owners, attached to the old home, who hesitate to build at this time, will consider the advantages of overcoating.

Go after your share of this profitable work.

The most satisfactory and economical method of renewing the exterior of an old frame dwelling is to overcoat it with stucco over

Kno-Burn Corrugated Metal Lath

It's self-furring and should be used to provide a good "key" for the stucco.

Your Supply Dealer can
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North Western Expanded Metal Co.

Member Associated Metal Lath Manufacturers

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He Waited Too Long



"If I only had this set of books twenty or thirty years ago, they might have changed my whole life. The knowledge in the big CYCLOPEDIA would have enabled me to increase my earning power, to take on big work, paying big money, and possibly have helped me to make a fortune in the building business."

Hundreds of letters like the above have come to us, breathing between the lines the same pathetic story of regret—showing how hard it is for the untrained man to really get ahead in life. **The opportunity is yours NOW**, and the way is easy. **Don't wait too long. Don't wait at all.** Read the terms of our **NO-RISK, Guarantee Offer** over again, and sign and mail coupon today. You risk absolutely nothing, and you will reap the benefit ever afterward.

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A. B.
11-17

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Town.....State.....

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Advantages of Concrete
Common and Hydraulic Lime
Cements (Portland, Natural, etc.)
Proportions for Mixing
Aggregates (Sand Gravel, Crushed Stone, etc.)
Mixing by Hand and Machine
Depositing Concrete
Concrete Troubles
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Cement Mortar
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Brick and Tile Machines
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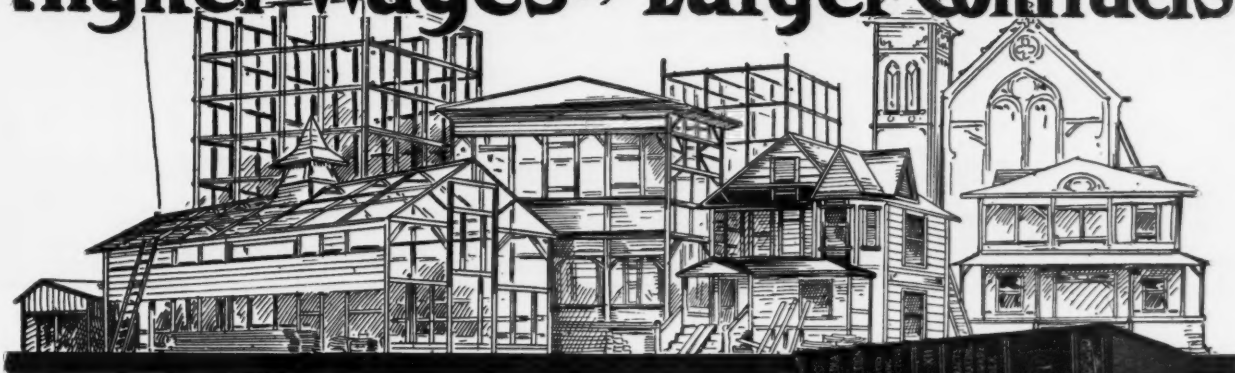
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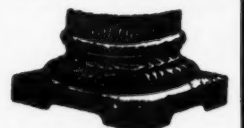
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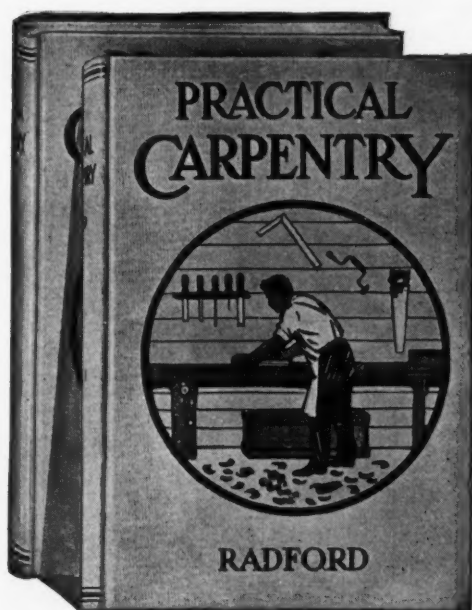
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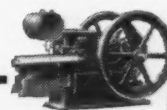
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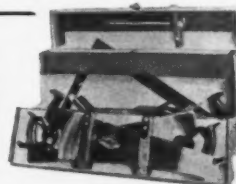
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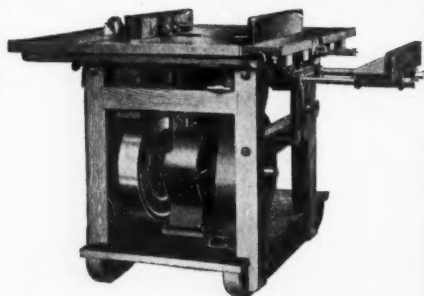


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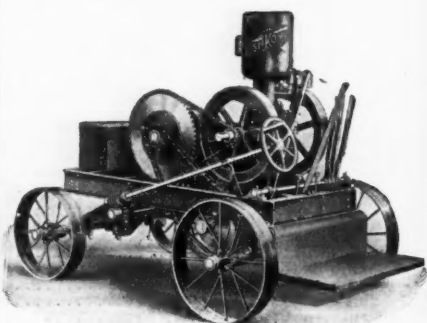
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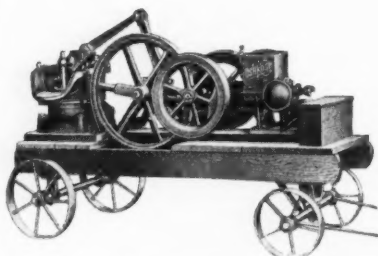
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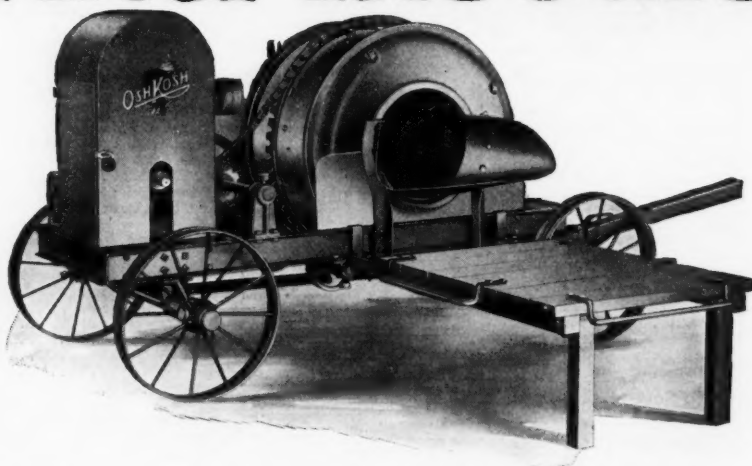
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A rubber diaphragm pump operated by a 2 H. P. gasoline engine. Will run a ten-hour day without attention and guaranteed to have sufficient power. Furnished on skids, or trucks, as desired.

Service — WHEN SERVICE IS NEEDED — After The Sale



THE man who gets the next big contract is the man who finished his last job **on time**.

But accidents are bound to happen—and a broken sprocket may mean having your men idle for days—a faulty job—a paralyzed contract—unless you can get immediate repairs. You will want a new part—and want it **quick**. You can get it quick if you own an



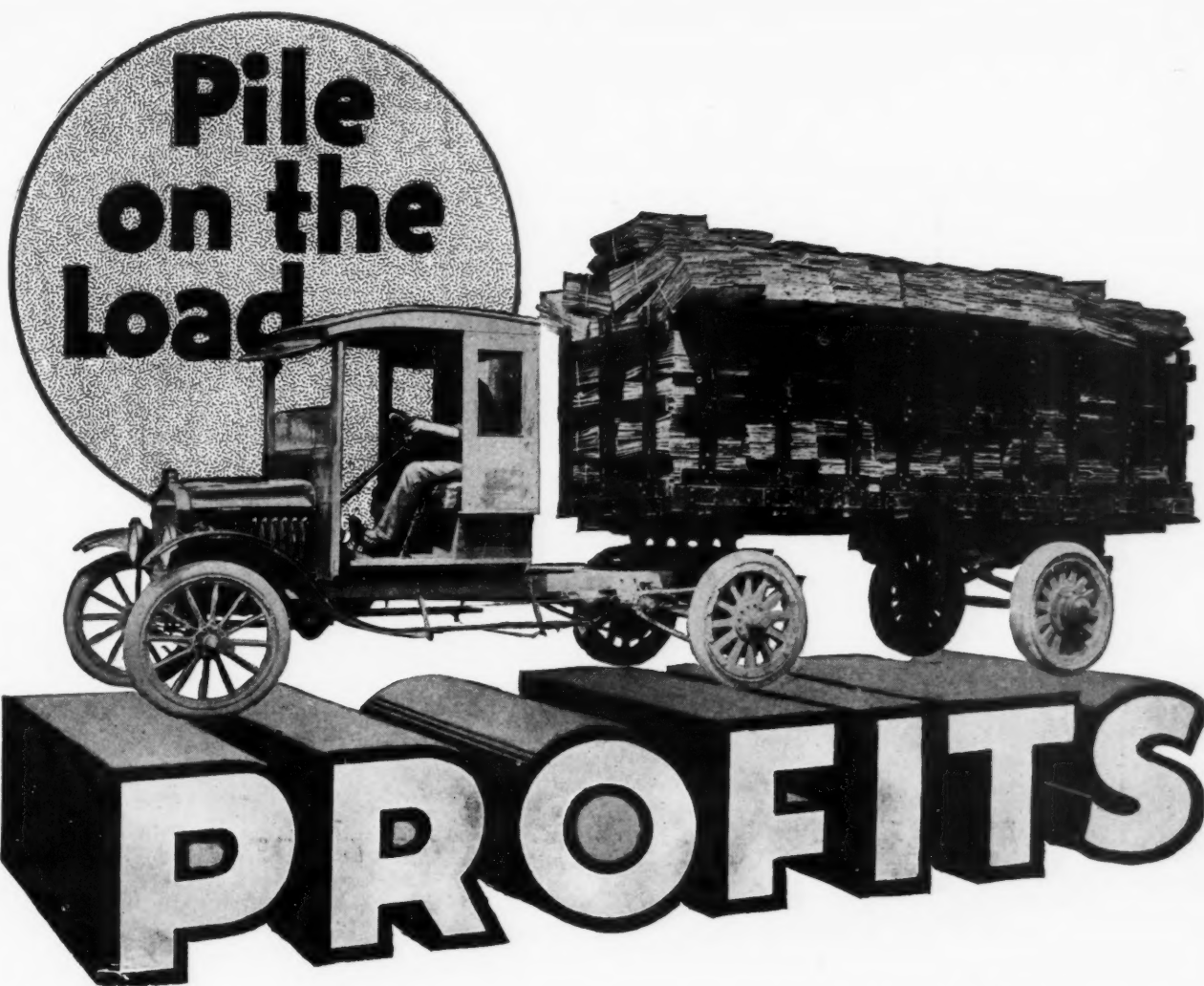
LOW LOADING MIXER

Oshkosh service—sure, speedy, obliging—stands firmly behind every Oshkosh sale. Phone your dealer if you need repairs.

The OSHKOSH Low Loading Mixer is built for long service—sturdy, efficient, rapid—it will deliver two batches per minute—and do it ten hours per day—or more. It loads easily, direct from a wheelbarrow and discharges directly into a wheelbarrow—a real saving of time and labor.

A letter will bring descriptive catalog on this or any of the other Oshkosh products shown on this page. There is an Oshkosh quality machine for every need.

Oshkosh Mfg. Co., 112 Main St., Oshkosh, Wis.
Liberty Bonds Accepted in Payment at Full Face Value



HERE'S the King Semi-Trailer carrying a three ton load hauled by a one ton truck. The truck itself could not safely handle more than its rated capacity, but its tremendous reserve pulling power enables it to handle the three ton load with ease.

By using this King Semi-Trailer, the owners—the C. A. Sauer Lumber Company of Ann Arbor, Michigan—have tripled their hauling efficiency. At practically the same operating cost they are carrying a payload three times as large. That's why you need a King Trailer or small Semi-Trailer—because, attached to any auto, truck or tractor, you triple your hauling efficiency without increasing your hauling expense.

The King Semi-Trailer is connected to the tractor unit by the wonderful King-Irwin Universal Motion Shock Absorbing Fifth Wheel—lengthens the life of tractor, trailer and load.

One driver, one truck and a King Trailer will do the work of four trucks and four drivers.

You Building Supply men will find that the King way is the most profitable, satisfactory and economical way to haul shingles, sash, doors, mill work, wall-board, bricks, lime, cement or plaster. You can serve customers more promptly, profitably and efficiently. In one delivery trip you will accomplish as much as you formerly did in three. You can build up an enormous country building trade and get orders on the strength of your ability to perform.

Let the King help you get more business. King Trailers and Semi-Trailers are built for strength, speed and service. There's a size to suit your immediate hauling requirements. Write for our illustrated booklet—"Cutting the Cost of Hauling"—and get all the facts. **It's FREE.** Fill out the coupon and mail it to us direct.



DEALERS—there's a big opportunity for the dealer who sells King Trailers.

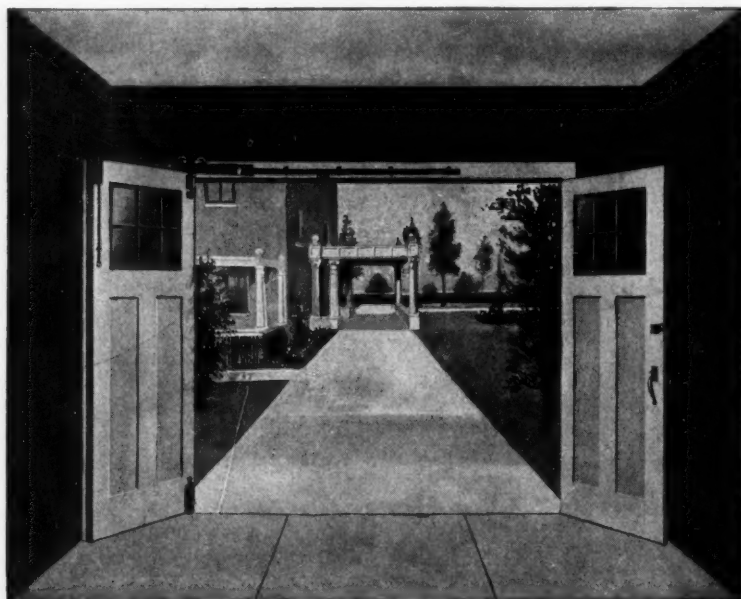
Mail This Coupon

THE KING TRAILER COMPANY,
802 Main Street, Ann Arbor, Michigan.
Gentlemen—Please tell me just how I can get more business with the King Trailer.

Name.....
Town.....
State.....
Business.....

Date.....

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



Builders—a new garage door set

See how the doors lie back flat against the wall, giving maximum space in the garage. Notice how the door to the right opens without interfering with the double doors, thus providing easy access to the garage.

You won't find an easier working combination sliding and swinging garage door equipment on the market—a light push and the doors swing, slide and fold against the opposite wall—a light pull and they close—compactly without binding or friction.

The adjustable feature prevents sagging of the doors. The doors are also adjustable in case of swelling or raising of cement floor.

Low Priced.

We have simplified the construction of the No. 805 Combination Garage Door Set in such a way as to be able to offer you equipment that is most efficient and also low in cost. You can give your client the very best kind of combination garage door equipment at a very reasonable cost.

No. 805 includes:

No. 29 Latch; 1 only Swivel Hanger; 6-foot Braced Rail; 4½ pair 4x4 inch Jap.
No. 505 T. P. Butts; 1 only No. 820 Chain Bolt; 1 only No. 830 Foot Bolt; 1 only
No. 5 Pull; 1 only 4½ inch No. 30 Safety Hasp.
No. 806 Set includes the same, except that No. 27 Latch is used instead of No.
29. Both sets furnished in japan finish.

We have just issued a circular illustrating and describing the No. 805 Combination Garage Door Set. If you haven't received a copy, drop us a line and we will mail you one promptly.

NATIONAL Manufacturing Company
STERLING ILLINOIS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER